

Birth Date

16 April 1937, Pittsburgh, Pennsylvania

Present Position

Higgins Professor Emeritus of Earth and Environmental Sciences
Columbia University

Business Address

Lamont-Doherty Earth Observatory of Columbia University
Palisades, New York 10964
Telephone: 845-365-8880, Fax: 845-365-8150
e-mail: sykes@ldeo.columbia.edu

Home Address

100 Washington Spring Road
Palisades, New York 10964
Telephone: 845-359-7428; Fax 845-359-7462

Wife

Kathleen Mahoney Sykes

Education

Ph.D., Columbia University in Geology, 1965
Worked under Professor Jack Oliver at Lamont-Doherty Geological Observatory
in the field of earthquake seismology.
Dissertation: The propagation of short-period seismic surface waves across
oceanic areas.

B.S. and M.S. degrees both awarded by Massachusetts Institute of Technology,
Cambridge, MA, Department of Geology and Geophysics, with emphasis on
geophysics.

Other areas of concentration: Physics, mathematics, electrical engineering.

Scholarships, Fellowships, Awards, and Honors

Proctor and Gamble Scholarship, M.I.T. for four years as an undergraduate.

Edward John Noble Leadership Award during first three years of graduate study.

Summer Research Fellow, 1959, Woods Hole Oceanographic Institution, Woods
Hole, MA.

Fellow of American Geophysical Union, Geological Society of America, Royal
Astronomical Society, American Association for Advancement of Science,
Geological Society (London).

H.O. Wood Award in seismology from Carnegie Institution of Washington for research in geologic aspects of seismology: \$10,000, 1967-1970.

Associate Editor, Journal of Geophysical Research, 1968-1970.

Sloan Fellow, 1969-1971.

Presented Frontiers in Geophysics paper "The New Global Tectonics" before 50th Anniversary Meeting of American Geophysical Union, April 1969.

President of Geological Section, New York Academy of Sciences, 1970-1971.

Macelwane Award to outstanding young geophysicist for 1970 by American Geophysical Union.

President of Section on Tectonophysics of American Geophysical Union, 1972-1974.

Walter H. Bucher Medal of the American Geophysical Union for "original contribution to the basic knowledge of the earth's crust", 1975.

Elected to U.S. National Academy of Sciences, 1979.

Chosen as Higgins Professor of Geology, Columbia University, 1978.

Work on Plate Tectonics included in the exhibit, "Creativity -- The Human Resource", California Academy of Sciences, San Francisco, April-May 1979.

Elected to American Academy of Arts and Sciences, 1979.

Sherman Fairchild Distinguished Scholar, California Institute of Technology, 1981.

Visiting Fellow, Clare Hall, Cambridge University, Spring 1982.

President-Elect of Section on Seismology, American Geophysical Union, 1982-1984; President 1984-1986.

Public Service Award for 1986 from Federation of American Scientists (along with Jack F. Evernden and Charles Archambeau) for "leadership, effectiveness, and courage in the application of seismology to the banning of nuclear tests, through public education and bureaucratic struggles".

Honorary Doctoral Degree by the State University of New York at Potsdam, May 1988.

Fellowship, John Simon Guggenheim Memorial Foundation, October 1, 1988-June 30, 1989.

John Wesley Powell Award by the U.S. Geological Survey for service to U.S. earthquake program, May 1991.

Finalist, Mayor of New York City's Award for Excellence in Mathematical, Physical and Engineering Sciences, 1992.

Medal of Seismological Society of America, March 1998.

Vetlesen Prize, for "achievement in the sciences resulting in a clearer understanding of the earth, its history or relation to the universe" January 24, 2000

Scientific Research

Scientific research includes investigations of long-period and mantle seismic waves (1961-1962); surface wave propagation across ocean areas (1961-1964); precise location of earthquake hypocenters and relationship of spatial distribution of earthquakes to large-scale tectonic phenomena (1962-); seismicity of island arcs, mid-ocean ridges, and fracture zones (1963-); field study of aftershocks of 1964 Alaskan earthquake (1964); field study of deep and shallow earthquakes in Fiji-Tonga region (1966); spatial and temporal distribution of major earthquakes and major aftershock series (1965-); field study of microearthquakes in Iceland (1968); earthquake prediction (1967-); seismology and the new global tectonics (1968-1975); field study of Denali fault, Alaska (1967); field study of microearthquakes in Nevada and in Puerto Rico - Virgin Islands region (1969); discrimination between earthquakes and underground explosions and implications for a nuclear test ban treaty (1962-); seismicity and the tectonics of eastern North America (1969-1985); state of stress in the interiors of plates and intraplate earthquakes (1969-1980, 1994-); seismicity, tectonics and earthquake prediction in Puerto Rico and Virgin Islands (1974-1984); spatial and temporal variations of seismicity in California (1981-); nuclear arms control (1970-); seismic safety of nuclear power plants and their spent fuel pools (2004-).

Employment

Present Status: Higgins Professor Emeritus of Earth and Environmental Sciences, Columbia University.

Head of Seismology Group (1973-1983)

Earth Sciences Laboratories, Environmental Science Services Administration, Department of Commerce as Research Geophysicist; Adjunct Professor of Geology, Columbia University, June 1966-August 1968. GS 14.

Lamont-Doherty Geological Observatory of Columbia University; Research Associate in Seismology, 1964-1966. Research Assistant, 1961-1964.

Woods Hole Oceanographic Institution, Woods Hole, MA, Summers of 1959 and 1960, research in marine geophysics, included participation in scientific cruises in Atlantic and Mediterranean. Master's thesis in conjunction with M.I.T. -- "Correlation of Physical Properties of Deep-Sea Sediments with Sea-Bottom Reflections."

U.S. Geological Survey, Geophysical Laboratory, Silver Spring, MD, summer of 1956 as physical science aide. Studied consolidation of calcium carbonate muds with E.C. Robertson and M. Newell.

Professional Societies

Seismological Society of America, American Geophysical Union, Royal Astronomical Society, Geological Society of America, New York Academy of Sciences, Geological Society of London, U.S. National Academy of Sciences, American Academy of Arts and Sciences, Arms Control Association, Federation of American Scientists. Originated ideas of forming Southern California Earthquake Center and Alaskan Volcano Center.

Scientific Committees and Advisory Boards

Polar Geophysics Panel of National Academy of Science (1968).

Advisory Committee of National Academy of Sciences to ESSA Research Laboratories on solid earth geophysics (1968-1969).

NASA Geodesy and Cartography Subcommittee of Space Science and Applications Steering Committee (1968-1970).

NAS/NRC Committee on World-Wide Standardized Seismograph Network (1969).

Organizing Secretary: International Symposium on Mechanical Properties and Processes of the Mantle, sponsored by International Upper Mantle Committee (1970).

Member Board of Directors of Seismological Society of America (1968-1972).

Member JOIDES panel on Deep Crustal Drilling in Marine Areas (1970-1971).

Member of U.S. Geodynamics Panel on Mid-Atlantic Ridge (1971-1972).

Committee on Seismology of National Academy of Sciences/National Research Council (1972-1975).

Testified before U.S. Senate Foreign Relations Committee, Subcommittee on Arms Control, International Law and Organization on Hearings on Comprehensive Test Ban Treaty, May 15, 1972.

Advisor to New York State Geological Survey and New York State Environmental Protection Agency on Earth Hazards Related to Fluid Injection (1970-1974).

Chairman of Search Committee for Director of Lamont-Doherty Geological Observatory, 1972.

Member of Vetlesen Award Committee, Columbia University (1972-1985).

Member of Executive Committee (1973-1977) and Advisory Board (1973-1981; 1999-) Lamont-Doherty Geological Observatory of Columbia University. Chairman of Advisory Board (1975-1981).

Panel on Earthquake Prediction, National Academy of Sciences/National Research Council (1973-1976).

Advisory Committee on Proposals for Earthquake Prediction, U.S. Geological Survey (1974).

Member of Working Group, U.S./U.S.S.R. Joint Program for Earthquake Prediction (1973-1978).

Member U.S. Technical Delegation for talks on treaty on Threshold Limitations of Underground Nuclear Explosions, Moscow, June-July 1974.

National Science Foundation Earth Science's Review Panel (1974-1977).

U.S. Geodynamics Committee, study groups on plate interiors and Cocos and Caribbean plates.

Member of U.S. Delegation on Earthquake Prediction during visit to U.S.S.R., October 1973.

Member of U.S. Seismology Group for visit to People's Republic of China, October - November, 1974.

Visiting Professor, Earthquake Research Institute of Tokyo University, November-December 1974.

Nominations Committee on Fellows for American Geophysical Union, 1975, and Committee on Publications 1975-1976. Committee for Bucher Medal, 1977, Committee for Bowie Medal, 1986-87, Chair, Bucher Medal, 2001.

Consultant and expert witness for New York State and for Citizen's Committee for the Protection of the Environment involving seismologic and geologic safety of Indian Point Nuclear Power Reactors, New York, 1975-1976.

Review committee for U.S. Federal Government program on Earthquake Prediction and Hazards Reduction under President's Science Advisor, Dr. H. Guyford Stever (1976).

Planning committee for Chapman Conference on "State of Stress in the Lithosphere", Aspen, Colorado, 1976.

U.S. Air Force -- AFTAC -- panel on seismic determination of yield of underground nuclear explosions, 1974-1977.

Defense Science Board -- panel on yields of underground nuclear explosions, 1977.

Committee on award of Day Medal -- Geological Society of America, 1974-1976; Penrose Medal, 1977-1978.

Member Seismological Panel, Office of Science & Technology Policy, Executive Office of the President, September 1 & 2, 1977.

Member USGS Earthquake Studies Advisory Panel, 1977-1981.

Member Columbia University Commission on Academic Priorities in the Arts and Sciences, 1978-1979.

Testified about Seismic Risk to Indian Point, NY, Nuclear Power Plants before Advisory Committee on Reactor Safety, U.S. Nuclear Regulatory Commission, June 16, 1978.

Member Search Committee for Director of New York State Geological Survey, 1978.

Chairman, Panel of Public Policy Regarding Prediction of Earthquakes, American Geophysical Union, 1979-1980.

Lecturer, NATO Summer Institute on "State of Stress in the Earth's Lithosphere", June 1979.

Convenor, Ewing Symposium on Earthquake Prediction, May 12-16, 1980.

Member Earthquake Prediction Evaluation Council, U.S. Geological Survey, 1979-1982.

Chairman of Search Committee for Director of Lamont-Doherty Geological Observatory, 1981.

Lecturer, NATO Summer School on Earthquake Risk, Guadeloupe, August 1983.

Member Advisory Panel on Seismology, Defense Advanced Research Projects Agency, 1983-1988.

Co-organizer of symposium "Verification of Nuclear Test Ban Treaties", with Dr. Jack Evernden, American Geophysical Union, Baltimore, MD, June 1983.

Co-organizer of interdisciplinary course for undergraduates "The Nuclear Arms Race", Columbia College, 1984, 1985.

Member, Columbia University Seminar on Arms Control, 1984-1996.

Chairman, National Earthquake Prediction Evaluation Council (NEPEC), U.S. Geological Survey, Fall 1984-Summer 1988.

Participant in NOVA television program "Spacebridge to Moscow", October 2, 1984.

Member of Expert Review Committee for Evaluation of National Earthquake Hazards Reduction Program, 1987.

Member of the Advisory Panel to Natural Resources Defense Council on Seismic Stations in the Soviet Union, 1986-1988.

Member of Seismic Verification Advisory Panel, Office of Technology Assessment, U. S. Congress, 1986-1987.

Seismology Seminar Course at Columbia University on Verification of Nuclear Test Ban Issues, with Paul G. Richards, Fall 1987 semester.

Participant, Belmont Conference on Nuclear Test Ban Policy, Fall 1988.

Member of U.S. National Committee for the Decade for Natural Hazards Reduction, National Academy of Sciences, National Research Council, 1989-1990.

Participant in NOVA program "Earthquake", 1990.

Invited Speaker, Princeton Symposium on Non-Proliferation and Nuclear Testing, Nov. 1992.

Co-Organizer, All Union Symposium on Verification of Treaties to Limit the Testing and Proliferation of Nuclear Weapons, American Geophysical Union Spring Meeting, May 27, 1993.

Invited talk "Earthquake Prediction", regional meeting of National Academy of Sciences, at Columbia University, Fall 1996.

Invited talk "Earthquake Prediction: What is Possible and what is Unknowable", Columbia Graduate students in science, April 9, 1997.

Co-organizer, symposium on "Earthquake Stress Triggers, Stress Shadows, and their Impact on Seismic Hazard", Menlo Park, CA, March 21-22, 1997.

Co-organizer, symposium on "Earth Systems Predictability: The Unknown and Unknowable", Santa Fe Institute Workshop, November 6-8, 1997.

Head, Natural Hazards Initiative, Lamont-Doherty Earth Observatory, 1998-99

Co-Organizer, All Union Symposium on Verification of Comprehensive Nuclear Test Ban Treaty, American Geophysical Union, Spring Meeting, May 31, 2000.

Testified in 2000 before Arms Control Advisory Board, U. S. State Dept., Jason group, Stanford-Lawyers Alliance for World Security, National Academy of Sciences/National Research Council Committee on Comprehensive Nuclear Test Ban Treaty.

Board of Directors, Federation of American Scientists, 2000-2003; also on their panel on CTBT.

American Geophysical Union, Chair Bucher Award, Fall 2001

PUBLICATIONS

- 1961 Sykes, L.R., E.C. Robertson, and M. Newell, Experimental consolidation of calcium carbonate sediment, in Environment of Calcium Carbonate Deposition West of Andros Island Bahamas, by P.E. Cloud, Jr., U.S. Geol. Surv. Prof. Paper 350.
- 1962 Sykes, L.R., M. Landisman, and Y. Sato, Mantle shear wave velocities determined from oceanic Love and Rayleigh wave dispersion, J. Geophys. Res., 67, 5257-5271.
- 1963 Sykes, L.R., Seismicity of the South Pacific Ocean, J. Geophys. Res., 68, 6006-6999.
- 1964 Sykes, L.R., and J. Oliver, The propagation of short-period seismic surface waves across oceanic areas, Part I -- Theoretical study, Part II -- Analysis of Seismograms, Bull. Seismol. Soc. Am., 54, 1349-1415.
- 1964 Sykes, L.R., and M. Landisman, The seismicity of East Africa, the Gulf of Aden, and the Arabian and Red Seas, Bull. Seismol. Soc. Am., 54, 1927-1940.
- 1964 Sykes, L.R., Deep-focus earthquakes in the New Hebrides region, J. Geophys. Res., 69, 5353-5355.

- 1965 Sykes, L.R., The seismicity of the Arctic, Bull. Seismol. Soc. Am., 55, 536-591.
- 1965 Sykes, L.R., and M. Ewing, The seismicity of Caribbean region, J. Geophys. Res., 70, 5065-5074.
- 1966 Tobin, D.G., and L. R. Sykes, Relationship of hypocenters of earthquakes to the geology of Alaska, J. Geophys. Res., 71, 1659-1667.
- 1966 Sykes, L.R., Spatial and temporal distribution of earthquakes, in ESSA Symposium on Earthquake Prediction, pp. 38-43, U.S. Dept. of Commerce, Washington, D.C.
- 1966 Sykes, L.R., Seismicity and deep structure of island arcs, J. Geophys. Res., 71, 2981-3006.
- 1967 Sykes, L.R., Mechanism of earthquakes and nature of faulting on the mid-Oceanic ridge, J. Geophys. Res., 72, 2131-2153.
- 1967 Isacks, B.L., L.R. Sykes, and J. Oliver, Spatial and temporal clustering of deep and shallow earthquakes in the Fiji-Tonga-Kermadec region, Bull. Seismol. Soc. Am., 57, 935-958.
- 1967 Sykes, L.R., Seismicity, Trans. AGU, 48, 389-395. A portion of U.S. National Report to the 14th General Assembly of I.U.G.G.
- 1968 Sykes, L.R. Seismological evidence for transform faults, sea-floor spreading and continental drift, in History of the Earth's Crust, Princeton Univ., edited by R.A. Phinney, pp. 120-150.
- 1968 Tobin, D.G., and L.R. Sykes, Seismicity and tectonics in the northeast Pacific Ocean, J. Geophys. Res., 73, 3821-3845.
- 1968 B.L. Isacks, J. Oliver, and L.R. Sykes, Seismology and the new global tectonics, J. Geophys. Res., 73, 5855-5899, also Tectonophysics, 7, 527-541, 1969.
- 1968 Sykes, L.R., Deep earthquakes and rapidly-running phase changes, a reply to Dennis and Walker, J. Geophys. Res., 73, 1508-1510.
- 1969 Banghar, A., and L.R. Sykes, Focal mechanisms of earthquakes in the Indian Ocean and adjacent regions, J. Geophys. Res., 74, 632-649.
- 1969 Sykes, L.R., B.L. Isacks, and J. Oliver, Spatial distribution of deep and shallow earthquakes of small magnitudes in the Fiji-Tonga region, Bull. Seismol. Soc. Am., 59, 1093-1113.
- 1969 Molnar, P., and L.R. Sykes, Tectonics of the Caribbean and Middle America regions from focal mechanisms and seismicity, Bull. Geol. Soc. Am., 80, 1639-1684.

- 1969 Molnar, P., K. Jacob, and L.R. Sykes, Microearthquake activity in eastern Nevada and Death Valley, California before and after the nuclear explosion Benham, Bull. Seismol. Soc. Am., 59, 2177-2184.
- 1969 Sykes, L.R., Seismicity of mid-Oceanic ridge system, in The Earth's Crust and Upper Mantle, Geophysical Monograph, 13, Am. Geophys. Union, Washington, D.C., P.J.Hart, editor, pp. 148-153.
- 1969 Molnar, P., J. Savino, L.R. Sykes, R.C. Liebermann, G. Hade, and P.W. Pomeroy, Small earthquakes and explosions in western North America recorded by new high-gain, long-period seismographs, Nature, 224, 1268-1273.
- 1969 Katsumata, M., and L.R. Sykes, Seismicity and tectonics of the western Pacific: Izu-Mariana-Caroline and Ryukyu-Taiwan regions, J. Geophys. Res., 74, 5923-5948.
- 1969 Isacks, B.L., L.R. Sykes, and J. Oliver, Focal mechanisms of deep and shallow earthquakes in the Tonga-Kermadec region and the tectonics of island arcs, Bull. Geol. Soc. Am., 80, 1443-1470.
- 1970 Sykes, L.R., Seismicity of the Indian Ocean and a possible nascent island arc between Ceylon and Australia, J. Geophys. Res., 75, 5041-5055.
- 1970 Sykes, L.R., Focal mechanism solutions for earthquakes along the world rift system, Bull. Seismol. Soc. Am., 60, 1749-1752.
- 1970 Murphy, A., L.R. Sykes, and T.W. Donnelly, Preliminary survey of the microseismicity of the northeastern Caribbean, Bull. Geol. Soc. Am., 81, 2459-2464.
- 1970 Sykes, L.R., Earthquake swarms and sea-floor spreading, J. Geophys. Res., 75, 6598-6611.
- 1970 L.R. Sykes, R. Kay, and O. Anderson, Mechanical properties and processes in the mantle: a review of upper mantle symposium in Flagstaff, Arizona, EOS, Trans. Amer. Geophys. Union, 51, 874-879.
- 1971 L.R. Sykes, J. Oliver, and B.L. Isacks, Earthquakes and tectonics, The Sea, Vol. 4, A.E. Maxwell, editor, John-Wiley Interscience, 354-420.
- 1971 Molnar, P., and L.R. Sykes, Plate tectonics and the Hispaniola area: Discussion, Bull. Geol. Soc. Am., 82, 1123-1126.
- 1971 Sykes, L.R., Review of recent research at Columbia University on the discrimination of underground explosions from earthquakes, in copies of papers presented at Woods Hole Conference on Seismic Discrimination, 20-23 July 1970, Advanced Research Projects Agency, 19 pages.

- 1971 Sykes, L.R., Aftershock zones of great earthquakes, seismicity gaps, earthquake prediction for Alaska and the Aleutians, J. Geophys. Res., 76, 8021-8041.
- 1971 Savino, J., L.R. Sykes, R.C. Liebermann, and P. Molnar, Excitation of seismic surface waves with periods of 15 to 70 sec for earthquakes and underground explosions, J. Geophys. Res., 76, 8003-8020.
- 1971 Evernden, J.F., W. Best, P.W. Pomeroy, T.V. McEvelly, J.M. Savino, and L.R. Sykes, Discrimination between small magnitude earthquakes and explosions, J. Geophys. Res., 76, 8042-8055.
- 1972 Sykes, L.R., Seismicity as a guide to global tectonics and earthquake prediction, A.R. Ritsema (editor), The Upper Mantle, Tectonophysics, 13, 1-4.
- 1972 Sbar, M.L., and L.R. Sykes, Contemporary compressive stress and seismicity in eastern North America: An example of intra-plate tectonics, Bull. Geol. Soc. Am., 84, 1861-1882.
- 1972 Kelleher, J., L.R. Sykes, and J. Oliver, Possible criteria for earthquake locations and their application to major Pacific plate boundaries, J. Geophys. Res., 78, 2547-2585.
- 1972 Savino, J., A.J. Murphy, J.M.W. Ryan, R. Tatham, L.R. Sykes, G.L. Choy, and K. McCamy, Results from the high-gain long-period seismograph experiment, Geophys. J., 31, 179-203.
- 1972 Sykes, L.R., and D. Hayes, Seismicity and tectonics of South America and adjacent oceanic areas, Abst. with Programs, 67th Annual Meeting, Geol. Soc. Am., 1971.
- 1972 Sykes, L.R., Testimony before U.S. Senate Foreign Relations Committee, Subcommittee on Arms Control, International Law and Organization, Hearings on Comprehensive Nuclear Test Ban Treaty, published remarks by L.R. Sykes, pp. 53-56, May 15, 1972.
- 1973 Aggarwal, Y., L.R. Sykes, J.G. Armbruster, and M.L. Sbar, Premonitory changes in seismic velocities and prediction of earthquakes, Nature, 241, 101-104.
- 1973 Scholz, C.H., L.R. Sykes, and Y.P. Aggarwal, Earthquake prediction: A physical basis, Science, 181, 803-810.
- 1973 Sykes, L.R., and M.L. Sbar, Intraplate earthquakes, lithospheric stresses and the driving mechanism of plate tectonics, Nature, 245, 298-302.
- 1973 Scholz, C.H., L.R. Sykes, and Y.P. Aggarwal, The physical basis for earthquake prediction, Kagaku, 43, 541-549.

- 1974 Sykes, L.R., and M.L. Sbar, Focal mechanism solutions of intraplate earthquakes and stresses in the lithosphere, in Geodynamics of Iceland and the North Atlantic Area, L. Kristijansson, ed., 207-224, Reidel Publ. Co., Holland.
- 1975 Aggarwal, Y.P., L.R. Sykes, D.W. Simpson, and P.G. Richards, Spatial and temporal variations in t_s/t_p and P-wave residuals at Blue Mountain Lake, New York: Application to earthquake prediction, J. Geophys. Res., **80**, 718-732.
- 1975 Sykes, L.R. Earthquake prediction: Learning to spot the warnings, a viewpoint, in Encounter with the Earth, by Leo F. Laporte, pp. 491-494, Canfield, Press, San Francisco.
- 1975 Sykes, L.R., Earthquake research in China, with members of the seismological delegation to the People's Republic of China, EOS, Trans. Amer. Geophys. Union, **56**, 838-881.
- 1976 Tatham, R., D. Forsythe, and L.R. Sykes, The occurrence of anomalous seismic events in eastern Tibet, Geophys. J., **45**, 451-481.
- 1976 The capability of the Ramapo fault, written testimony of Dr. Lynn R. Sykes before the Atomic Safety and Licensing Appeal Board of the U.S. Nuclear Regulatory Commission.
- 1976 Testimony of Dr. Lynn R. Sykes on Behalf of the New York State Atomic Energy Council on Issue I: Should the Cape Ann, Mass., earthquake or any other shock be used in determining the design earthquake for the Indian Point, New York nuclear power reactors?, before the Atomic Safety and Licensing Appeal Board of the U.S. Nuclear Regulatory Commission.
- 1976 Sykes, L.R., Earthquake prediction research outside the United States, in Predicting Earthquakes: A Scientific and Technical Evaluation with Implications for Society, Panel on Earthquake Prediction of the Committee on Seismology, National Academy of Sciences, Washington, D.C., pp. 51-62.
- 1977 Fletcher, J. B., and L. R. Sykes, Earthquakes related to hydraulic mining and natural seismic activity in western New York State, J. Geophys. Res., **82**, 3767-3780.
- 1977 Sbar, M. L., and L. R. Sykes, Seismicity and lithospheric stress in New York and adjacent areas, J. Geophys. Res., **82**, 5771-5786.
- 1977 Sykes, L. R., Research on earthquake prediction and related areas at Columbia University, J. Phys. of the Earth, **25**, S13 - S29.
- 1978 Fletcher, J. B., M. L. Sbar, and L. R. Sykes, Seismic trends and travel-time residuals in eastern North America and their tectonic implications, Bull. Geol. Soc. Am., **89**, 1656-1676.

- 1978 Aggarwal, Y. P., and L. R. Sykes, Earthquakes, faults and nuclear power plants in southern New York - northern New Jersey, Science, 200, 425-429.
- 1978 Sykes, L. R., Intra-plate seismicity, reactivation of pre-existing zones of weakness, alkaline magnetism, and other tectonics post-dating continental separation, Rev. Geophys. Space Phys., 16, 621-688.
- 1978 Sykes, L. R., Plate tectonic framework of Middle America and Caribbean regions and prospects for earthquake prediction, International Symposium on the February 4th, 1976 Guatemalan Earthquake and Reconstruction Process, Proceedings, vol. 2, 11 pps.
- 1979 McCann, W. R., S. Nishenko, L. R. Sykes, and J. Krause, Seismic gaps and plate tectonics: Seismic potential for major earthquakes, PAGEOPH, 117, 1082-1147. Also in U.S. Geol. Survey, Open File Report 78-943, pp. 441-584, 1978.
- 1980 Sykes, L. R., Earthquakes and other processes within lithospheric plates and the reactivation of pre-existing zones of weakness, in The Continental Crust and Its Mineral Deposits, edited by D. W. Strangeway, Geol. Soc. Canada Spec. Paper 20, 215-237.
- 1980 McCann, W. R., O. J. Perez, and L. R. Sykes, Yakataga seismic gap, Alaska: Seismic history and earthquake potential, Science, 207, 1309-1314.
- 1980 Sykes, L. R., Testimony presented in Hearings before the Subcommittee on Science, Technology and Space, Committee on Commerce, Science and Transportation, U.S. Senate, on Reauthorization of National Hazards Reduction Act, U.S. Govt. Printing Office, Serial 96-90, pp. 55-79, April 2, 1980.
- 1980 Sykes, L. R., J. Kisslinger, L. House, J. Davies, and K. H. Jacob, Rupture zones of great earthquakes in the Alaska-Aleutian arc, 1784 to 1980, Science, 210, 1343-1345.
- 1981 Sykes, L. R., Preface, in Earthquake Prediction, An International Review, Maurice Ewing Series 4, edited by D. W. Simpson and P. G. Richards, AGU, Washington, D.C.
- 1981 Davies, J. N., L. R. Sykes, L. House, and K. H. Jacob, Shumagin seismic gap, Alaska Peninsula: History of great earthquakes, tectonic setting, and evidence for high seismic potential, J. Geophys. Res., 86, 3821-3855.
- 1981 House, L., L. R. Sykes, J. N. Davies, and K. H. Jacob, Identification of a possible seismic gap near Unalaska Island, eastern Aleutians, Alaska, in Earthquake Prediction, An International Review, Maurice Ewing Series 4, edited by D. W. Simpson and P. G. Richards, AGU, 81-92, Washington, D.C.

- 1981 Sykes, L. R., J. Kisslinger, L. House, J. Davies, and K. H. Jacob, Rupture zones and repeat times of great earthquakes along the Alaska-Aleutian arc, 1784-1980, in Earthquake Prediction, An International Review, Maurice Ewing Series 4, edited by D. W. Simpson and P. G. Richards, AGU, 73-80, Washington, D.C.
- 1981 Sykes, L. R., and R. C. Quittmeyer, Repeat times of great earthquakes along simple plate boundaries, in Earthquake Prediction, An International Review, Maurice Ewing Series 4, edited by D. W. Simpson and P. G. Richards, AGU, 217-247 Washington, D.C.
- 1982 Sykes, L. R., and J. F. Evernden, The Verification of a Comprehensive Nuclear Test Ban, Sci. Amer., 247, no. 4, 47-55.
- 1982 Sykes, L. R., W. R. McCann, and A. L. Kafka, Motion of Caribbean plate during last 7 million years and implications for earlier Cenozoic movements, J. Geophys. Res., 87, 10,656-10,676.
- 1982 Peseckis, L., and L. R. Sykes, P-wave residuals in the northeastern United States and their relationship to major structural features, Lamont-Doherty Geological Observatory Technical Report to U.S. Nuclear Regulatory Commission.
- 1982 Sykes, L. R., The search for a comprehensive nuclear test ban: the 25th year, presented at Columbia University Symposium on Arms Race for Armistice Day, November 11, 1982.
- 1982 Raleigh, C.B., K. Sieh, L.R. Sykes, and D.L. Anderson, Forecasting southern California earthquakes, Science, 217, 1097-1104.
- 1983 Sykes, L.R., Predicting great earthquakes, in Earthquakes: Observation, Theory and Interpretation, LXXXV Corso, Soc. Italiana di Fisica, Bologna, Italy, 398-435.
- 1983 Sykes, L. R., J. F. Evernden, and I. Cifuentes, Seismic methods for verifying nuclear test bans, Physics, Technology and the Nuclear Arms Race, edited by D. W. Hafemeister and D. Schroeer, pp. 85-133, Am. Inst. Physics, New York.
- 1983 Sykes, L.R., Verification of Nuclear Test Bans, presented at Symposium for Staff Members of U.S. House of Representatives, January 27, 1983.
- 1983 Sykes, L. R., Comprehensive nuclear test ban, Testimony at Mock Hearing on Verifying Arms Control Agreements sponsored by Federation of American Scientists, Washington, D.C. Excerpts published in F.A.S., Public Interest Report, 36, no. 4, pp 8-11.

- 1984 McCann, W. R., and L. R. Sykes, Subduction of aseismic ridges beneath the Caribbean plate: Implications for the tectonics and seismic potential of the northeastern Caribbean: J. Geophys. Res., 89, 4493-4519.
- 1984 Sykes, L. R., and S. Nishenko, Probabilities of occurrence of large plate rupturing earthquakes for the San Andreas, San Jacinto and Imperial faults, California, 1983-2003, J. Geophys. Res., 89, 5905-5927.
- 1984 Sykes, L. R., and I. Cifuentes, Yields of Soviet underground nuclear explosions from seismic surface waves: Compliance with the Threshold Test Ban Treaty, Proc.of the U.S. National Acad. Sci., 81, 1922-1925.
- 1984 Evernden, J. F., and L. R. Sykes, Nuclear test yields, Science, 223, 642-644.
- 1984 Sykes, L. R., Verifying nuclear test ban treaties, Pugwash Conf. on Science and World Affairs, Geneva, June 3-4, 17 pp.
- 1985 Sykes, L. R., and L. Seeber, Great earthquakes and great asperities, San Andreas fault, southern California, Geology, 13, 835-838.
- 1985 Sykes, L. R., Verification of a Comprehensive Test Ban Treaty, Soviet Compliance with the Threshold Test Ban Treaty and Testing of Nuclear Weapons, presented at Symposium for Staff Members, U.S. House of Representatives, March 8, 1985, 12 pp. Also in Proposals to Ban Nuclear Testing, Committee on Foreign Affairs, U.S. House of Representatives, pp. 195-205, U.S. Govt. Printing Office, Wash., D.C.
- 1985 Sykes, L.R. Verification of Nuclear Test Ban Treaties, testimony before the Subcommittee on Arms Control, International Security and Science, Committee on Foreign Affairs, U.S. House of Representatives, May 8, 1985, 26 pages. Published in Congressional Record. Also in Proposals to Ban Nuclear Testing, Committee on Foreign Affairs, U.S. House of Representatives, pp. 98-104, 111-136, 220-223, 357-365, U.S. Govt. Printing Office, Wash., D.C., 47-128-O-85.
- 1985 Sykes, L. R., Verification of a Comprehensive Nuclear Test Ban Treaty, Soviet Compliance with the Threshold Test Ban Treaty, and the Sizes of Soviet Strategic Nuclear Weapons, Testimony before Special Panel on Arms Control and Disarmament, Committee on Armed Services, U.S. House of Representatives, November 20, 1985. Published in Congressional Record, and in H.A.S.C., No. 99-18, pp. 317-416, 431-437, U.S. Govt. Printing Office, Wash., D.C., 55-467-01, 1986, Also in Modern Geology, 10, 303-321, 1986.
- 1986 Sykes, L. R., and G. C. Wiggins, Yields of Soviet underground nuclear explosions at Novaya Zemlya, 1964-1976, from seismic body and surface waves, Proc. of the Nat. Acad. of Sci., 83, 201-205.

- 1986 Nicholson, C., L. Seeber, P. Williams, and L. R. Sykes, Seismicity and fault kinematics through the eastern Transverse Ranges, California: Block rotation, strike-slip faulting and low angle thrusts, J. Geophys. Res., 91, 4891-4908.
- 1986 Nicholson, C., L. Seeber, P. Williams, and L. R. Sykes, Seismic evidence for conjugate slip and block rotation within the San Andreas fault system, Southern California, Tectonics, 5, 629-648.
- 1986 Sykes, L.R., Seismic monitoring for a nuclear test ban, Modern Geology, 10, 293-295..
- 1986 McCann, W. R., and L. R. Sykes, Reply to Stein et al., J. Geophys. Res., 91, 787-791.
- 1986 Sykes, L.R., Letter to Honorable Les Aspin, Chairman, House Committee on Armed Services, Further Comments on Testimony before House Committee on Armed Services and H.A.S.C., No. 99-18, 9 June, 1986.
- 1986 Sykes, L.R., Advancing United States National Security Interests through Verifiable Limitations on Nuclear Testing, testimony before Committee on Foreign Relations, U.S. Senate, 29 pp., June 26, 1986. In Congressional Record.
- 1986 Sykes, L.R., Role of National Earthquake Prediction Evaluation Council in Development of Earthquake Predictions Scenarios and Response Plans for Parkfield Earthquake, U.S. Geological Survey Open File Report, 86-365, pp. iii-iv.
- 1987 Sykes, L. R., and D. M. Davis, The yields of Soviet strategic weapons, Scientific American., 256, no. 1. pp. 29-37.
- 1987 Sykes, L.R., Underground nuclear explosions: verifying limits on underground testing, yield estimates, and public policy, in U.S. National Report to International Union of Geodesy and Geophysics, Reviews of Geophysics, 25, 1209-1214, 1987.
- 1988 Sykes, L.R., Some Notes on Comprehensive Test Ban Verification, Modern Geology, 13, 13-20, 1988.
- 1988 Byrne, D.E., D.M. Davis and L.R. Sykes, Loci and Maximum Size of Thrust Earthquakes and the Mechanics of the Shallow Region of Subduction Zones, Tectonics, 7, 833-857, 1988.
- 1989 Sykes, L.R., and S. Ruggi, Soviet nuclear testing, in Soviet Nuclear Weapons, Nuclear Weapons Databook, 4, chapter 10, pp. 332-382, Harper and Row, New York. Also published by Natural Resources Defense Council as working paper NWD 86-4, November 1986.

- 1989 Sykes, L.R., and Ekström, G., Comparison of seismic and hydrodynamic yield determinations for the Soviet joint verification experiment of 1988, Proc. National Acad. Sci., U.S.A., 86, 3456-3460, 1989.
- 1989 Hudnut, W.K., Seeber, L., Pacheco, J., Armbruster, J., Sykes, L., Bond, G., and Kominz, M., Cross faults and block rotation in southern California: earthquake triggering and strain distribution, Lamont-Doherty Geological Observatory, [Yearbook], 1988, 44-49.
- 1989 Sykes, L.R., Testimony presented on November 2, 1989 to the Subcommittee on General Oversight and Investigations, Committee on Interior and Insular Affairs, U.S. House of Representatives, on the Participation of the U.S. Geological Survey in the National Earthquake Hazards Reduction Program and its activities under the National Earthquake Hazards Reduction Act, Congressional Record.
- 1990 Williams, P., L.R. Sykes, C. Nicholson, and L. Seeber, Seismotectonics of the easternmost transverse ranges, California: Relevance for seismic potential of the southern San Andreas Fault, Tectonics, 9, 185-204.
- 1990 Sykes, L.R., and S. Jaumé, Seismic activity on neighboring faults as a long-term precursor to large earthquakes in the San Francisco Bay area, Nature, 348, 595-599.
- 1991 Sykes, L.R. Verification of the Threshold Test Ban and Peaceful Nuclear Explosions Treaties and their Verification Protocols in Threshold Test Ban and Peaceful Nuclear Explosions Treaties with the U.S.S.R., Hearings before the Committee on Foreign Relations, U.S. Senate, July 17- Sept. 13, 1990, pp. 116-120, U.S. Gov. Printing Office, 32-517-91-1.
- 1991 Byrne, D.E., L.R. Sykes, D.M. Davis, Great thrust earthquakes and aseismic slip along the plate boundary of Makran subduction zone, J. Geophys. Res., 97, B1, 449-478.
- 1991 Petersen, M.D., K. Jacob, L.R. Sykes and J. Pacheco, Regional probabilistic seismic hazard analysis for the San Francisco Bay Area, in Proceedings Fourth International Conference on Seismic Zonation, EERI, Stanford University, 3, 707-714.
- 1991 Petersen, M.D., L. Seeber, L.R. Sykes, J.L. Nábelek, J.G. Armbruster, J. Pacheco, and K.W. Hudnut, Seismicity and fault interaction, southern San Jacinto fault zone and adjacent faults, southern California: Implications for seismic hazard, Tectonics, 10, 1187-1203.
- 1992 Sykes, L.R., Yields of underground nuclear explosions at Azgir and Shagan River USSR, and Implications for Identifying Decoupled nuclear testing in salt, PL-TR-92-2002, 34 pp., Phillips Laboratory, Hanscom Air Force Base, Ma.
- 1992 Pacheco, J.F., C.H. Scholz and L.R. Sykes, Changes in frequency-size relationship from small to large earthquakes, Nature, v. 355, 71-73.

- 1992 Pacheco, J.F. and L.R. Sykes, Seismic Moment Catalog of large, shallow earthquakes, 1900-1989, Bull. Seismol. Soc. Amer., 82, 1306-1349.
- 1992 Tuttle, M.P. and L.R. Sykes, Re-evaluation of several large historic earthquakes in the vicinity of Loma Prieta and Peninsular segments of the San Andreas Fault, California, Bull. Seismol Soc. Amer., 82, 1802-1820.
- 1992 Jaumé, S. and L.R. Sykes, Changes in state of stress on the southern San Andreas fault resulting from the California earthquake sequence of April-June 1992, Science, 258, 1325-1328.
- 1992 Sykes, L.R. and P. Lyubomirskiy, Analysis of small seismic events near Azgir, Kazakhstan: Implication for identifying chemical and decoupled nuclear explosions in a major salt dome province, in Papers Presented at 14th Annual PL/DARPA Seismic Research Symposium, Phillips Laboratory, Hanscom Air Force Base, Ma. pp. 415-421.
- 1993 Pacheco, J.F., L.R. Sykes and C.H. Scholz, Nature of seismic coupling along simple plate boundaries of the subduction type, Jour. Geophys. Res., 98,14,133-14,159.
- 1993 Tuttle, M.P. and L.R. Sykes, Re-evaluation of the 1838, 1865, 1868 and 1890 earthquakes in the San Francisco Bay area, in Proc. Second Conference on Earthquake Hazards in Eastern San Francisco Bay Area, Calif. Dept. Conservation, Div. Mines and Geology, Spec.Pub, 113, pp. 81-89.
- 1993 Sykes, L.R., J.Deng, and P. Lyubomirskiy, Accurate Location of Nuclear Explosions at Azgir, Kazakhstan, from Satellite Images and Seismic Data: Implications for Monitoring Decoupled Explosions, Geophys. Res. Letters, 20, 1919-1922.
- 1993 Nishenko, S.P. and L.R. Sykes, Comment on " Seismic Gap Hypothesis: Ten Years After" by Y.Y Kagan and D.D. Jackson, Jour. Geophys.Res., 98, 9909-9916.
- 1994 Estabrook, C.H., K. Jacob and L.R. Sykes, Body Wave and Surface Wave Analysis of Large and Great Earthquakes along the Eastern Aleutian Arc, 1923-1989: Implications for Future Events, Jour. Geophys. Res., 99, 11,643-11,662.
- 1994 Johnson, J.M., Y. Tanioka, L.J. Ruff, K. Satake, H. Kanamori, and L.R. Sykes, The 1957 Great Aleutian Earthquake, PAGEOPH, 142 , 1-28.
- 1995 Deng, J. and Sykes, L.R., Determination of Euler Pole for Contemporary Relative Motion of Caribbean and North American Plates using Slip Vectors of Interplate Earthquakes, Tectonics, 14, 39-53.

- 1995 Abers, G., X.X. Hu, and L.R. Sykes, Source scaling of earthquakes in the Shumagin region, Alaska: Time domain inversions of regional waveforms, Geophys. J. Intern., 123,41-58.
- 1996 Jaumé, S.J. and Sykes, L.R., Evolution of Moderate Seismicity in the San Francisco Bay Region, 1850 to 1993: Seismicity Changes Related to the Occurrence of Large and Great Earthquakes, Jour. Geophys. Res., 101, 765-789.
- 1996 Sykes, L.R., Dealing with decoupled nuclear explosions under a comprehensive test ban treaty, in Monitoring a comprehensive nuclear test ban treaty, NATO ASI series E, 303, Kluwer Academic Publishers, Dordrecht, Netherlands, edited by E.S. Husebye and A.M. Dainty, pp. 247-293.
- 1996 Sykes, L.R., Intermediate and Long Term Earthquake Prediction, in Earthquake Prediction: The Scientific Challenge, Proc. Nat. Acad. Sci. USA, 93, 3732-3739.
- 1996 Deng, J. and Sykes, L.R., Triggering of 1812 Santa Barbara earthquake by a great San Andreas shock: implications for future seismic hazards in Southern California, Geophys. Res. Lett., 23, 1155-1158.
- 1996 Triep, E. and Sykes, L.R., Catalog of shallow intracontinental earthquakes, Lamont WWW home page.
- 1997 Triep, E. and Sykes L.R., Frequency of occurrence of moderate to great earthquakes in intracontinental regions, J. Geophys. Res., 102, 9923-9948.
- 1997 Deng, J. and Sykes, L.R., Evolution of stress field in southern California and triggering of moderate-size earthquakes: A 200-year perspective, J. Geophys. Res., 102, 9859-9886.
- 1997 Deng, J. and Sykes, L.R., Stress evolution in southern California and triggering of moderate, small and mirco earthquakes, J. Geophys. Res., 102, 24,411-24,435.
- 1997 Sykes, L.R., Small Earthquake near Russian Test Site leads to U.S. Charges of Cheating on Comprehensive Nuclear Test Ban Treaty, F.A.S. Public Interest Report, 50, no. 6, Nov.-Dec., Federation of American Scientists, Washington DC., 12 pages.
- 1998 Sykes, L.R., Evaluating Natural Hazards and Reducing their Risk: A Proposal and Recommendations to the Columbia Earth Institute, (unpublished document).
- 1999 Sykes, L. R., B. E. Shaw and C. H. Scholz, Rethinking Earthquake Prediction, Pure and Applied Geophysics, 155, 207-232, 1999.
- 1999 Jaumé, S. C. and Sykes, L. R., Evolving toward a critical point: a review of accelerating seismic moment/energy release prior to large and great earthquakes, Pure and Applied Geophysics, 155, 279-305, 1999.

- 1999 Sykes, L. R., Earth Shaking Events: Seismology, Plate Tectonics and the Quest for a Comprehensive Nuclear Test Ban Treaty, in Lamont-Doherty Earth Observatory of Columbia University: Twelve Perspectives on the First Fifty Years, 1949-1999, chapter 4 , pp. 48-55, edited by L. Lippsett.
- 1999 Davis, Dan M. and L. R. Sykes, Geologic Constraints on Clandestine Nuclear Testing in South Asia, Proc. Natl. Acad. Sci. USA, 96, 11090-11095.
- 1999 Kidder, Ray, Lynn Sykes and Frank von Hippel, "False Fears About a Test Ban" Washington Post, Op Ed column, October 10, page B7
- 2000 Sykes, L.R., False and Misleading Claims about Verification during the Senate Debate on the Comprehensive Nuclear Test Ban Treaty, F.A.S. Public Interest Report, 53, no. 3, May-June, Federation of American Scientists, Washington DC., 12 pages.
- 2001 Papadimitriou, E. E. and L. R. Sykes, Evolution of the Stress Field in the Northern Aegean (Greece), Geophys. J. Int. 146, 747-759.
- 2001 Du, W. X. and L. R. Sykes, Changes in Frequency of Moderate-Size Earthquakes and Coulomb Failure Stress before and after the Landers, California, Earthquake of 1992, Bull Seismol. Soc. Amer. 91, 725-738.
- 2001 Kim, W. Y., L. R. Sykes, J. H. Armitage, J. K. Xie, K. H. Jacob, P. G. Richards, M. West, F. Waldhauser, J. Armbruster, L. Seeber, W. X. Du and A. Lerner-Lam, Seismic Waves Generated by Aircraft Impacts and Building Collapses at World Trade Center, New York City, EOS Trans. Amer. Geophys. Union 47, 565-571.
- 2001 Sykes, L. R., S. L. Yunga and T. G. Rautian, Intraplate Earthquakes in the Soviet Union: a Comparison with other Intraplate Areas of Continents, unpublished Manuscript.
- 2002 Sykes, L. R., Four Decades of Progress in Seismic Identification Help Verify the CTBT, Eos, Trans. Amer. Geophys. Union, 83, #44, pp. 497+500, 29 Oct.
- 2002 Sykes, L. R., Academy Report Addresses CTBT Issues: Where Do We Go From Here? FAS Pubic Interest Report, Journ. of Federation of American Scientists, 55, #4, pp. 9-11, July/August.
- 2003 W. X. Du, L. R. Sykes, B.E. Shaw and C.H. Scholz, Triggered aseismic fault slip from nearby Earthquakes, static or dynamic effect?, J. Geophys. Res., 108, ESE 24-1 to 24-21.
- 2003 W. X. Du, W. Y. Kim and L. R. Sykes, Earthquake Source Parameters and State of Stress for Northeastern United States and Southeastern Canada from Analysis of Regional Seismograms, Bull Seismol. Soc. Amer. 93, 1633-1648.

- 2003 Sykes, L. R., Seismology, plate tectonics and the quest for a Comprehensive Nuclear Test Ban Treaty: a personal history of 40 years at LDEO, in *International Handbook of Earthquake & Engineering and Seismology, Part B*, edited by W.H.K. Lee et al., pp. 1456-1457, Academic Press.
- 2004 Sykes, L. R., Indian Point: Critical Decisions Ahead, 10964 (newsletter for Palisades NY), 3 pages.
- 2004 Sykes, L. R., Earthquake Risks to Spent Fuel at Indian Point, written statement and oral presentation at meeting of U.S. Nuclear Regulatory Commission on Interim Storage of Spent Nuclear Fuel at Indian Point, 5 pages, July 15, 2004.
- 2005 Granville, J. P., P. G. Richards, W.-Y. Kim, and L. R. Sykes, Understanding the differences between three teleseismic mb scales, *Bull. Seismol. Soc. Amer.* 95, 1809-1824.
- 2005 Photo and one page description of Lynn Sykes in *Faces of Science*, pp. 150-151, by Mariana Cook, Norton, New York.
- 2006 Sykes, L. R., and W. Menke, Repeat Times of Large Earthquakes: Implications for Earthquake Mechanics and Long-Term Prediction, *Bull. Seismol. Soc. Amer.*, 97, 1569-1596.