

CURRICULUM VITAE  
LYNN MARGULIS\*

LAST POSITION: Distinguished University Professor  
Department of Geosciences  
University of Massachusetts  
Amherst, MA 01003-9297

DATES: March 5, 1938—November 22, 2011

HONORS: National Academy of Sciences (1983)  
Russian Academy of Natural Sciences (1997)  
Library of Congress National Manuscript Collection, papers archived (1998)  
National Medal of Science, President William Clinton (1999)  
Alexander von Humboldt Prize, Berlin (2002-2005)  
President of Sigma Xi, The Scientific Research Society (2005-2006)  
George Eastman Professorship, University of Oxford (2008-2009)  
Darwin-Wallace Medal, Linnean Society of London (2009)

EDUCATION:

The College, University of Chicago (1954-1957); 12th grade certificate (1955); A.B., Liberal Arts (1957)

University of Colorado, Department of Biology (summer, 1957)

University of Wisconsin (1957-1960)

Master of Science (1960) Aspects of RNA Stability in *Amoeba proteus*  
Joint Degree in the Departments of Zoology and Genetics

University of California, Berkeley (1960-1963)

Doctor of Philosophy (January 1965) An Unusual Pattern of Thymidine Incorporation in *Euglena*  
Department of Genetics

\*Formerly Lynn Alexander Sagan

## FELLOWSHIPS AND SCHOLARSHIPS:

- 1955-1957. University of Chicago Scholarship
- 1957-1958. Teaching Assistant, General Zoology, General Biology, University of Wisconsin
- 1958-1959. Research Assistant, University of Wisconsin, Department of Botany
- 1961-1963. NIH Traineeship, Department of Genetics, Berkeley
- 1976-1977. Sherman Fairchild Distinguished Scholar, California Institute of Technology
- 1979. Guggenheim Foundation Fellow (research on early life on Earth)
- 1991. Rockefeller Foundation (Bellagio Conference and Study Center, Bellagio, Italy)
- 1992. Faculty Fellowship Award, University of Massachusetts, Amherst
- 1997. Montgomery Fellow, Dartmouth College, Hanover, New Hampshire
- 2000. Collegium Helveticum Fellow, Switzerland
- 2002. Hanse-Wissenschaftskolleg Fellow, Delmenhorst, Germany
- 2008-2009. Professorial Fellowship at Balliol College, University of Oxford, United Kingdom
- 2010. Faculty Convocation Award for outstanding accomplishments in research and creative activities.

## FIELD EXPERIENCE:

- 1952. Work on a communal agricultural settlement, Moshav Moldeth, Israel.
- 1956. Anthropological field research on medical practices (the modern doctor and the curandero) in Tepoztlan, Morelos, Mexico. (With Dr. Oscar Lewis, registered as student in the University of Illinois for this research.).
- 1965. Bogotá, Medellín, Cali, Tunja (Colombia, South America). Director, biology, Peace Corps Colombia Project (Brandeis University). Assessment of Peace Corps program in action.
- 1966. Bogotá, Medellín, Cali, Tunja (Colombia, South America). Director, biology, Peace Corps Colombia Project (Brandeis University). Assessment of Peace Corps program in action.
- 1966. Mexico, D.F., Merida, Yucatan, Mexico. Dissemination of elementary science materials.
- 1967. Akosombo, Ghana, West Africa. Education Development Center--African Primary Science Project Workshop (now SEPA: Science Education Project for Africa).
- 1970. Brazil, IBICC (Instituto Brasileiro de Educação, Ciência e Cultura) Consultant, Science education.
- 1976. Short course on Cell Evolution, Barcelona, Spain (in Spanish).
- 1977. Laguna Figueroa, Baja California Norte, Mexico.
- 1979. Laguna Figueroa, Baja California Norte, Mexico (Guggenheim fellowship supported).
- 1980. Laguna Figueroa, Baja California Norte, Mexico.
- 1981. Laguna Figueroa, Baja California Norte, Mexico.
- 1982. International geological field trip, Caborca, Sonora, Mexico. Field work, Laguna Figueroa, Baja California Norte, Mexico.
- 1983. May-June. Earthwatch fieldwork, Laguna Figueroa, Baja California Norte, Mexico.  
October. Fieldwork, Laguna Figueroa, Baja California Norte, Mexico.  
Oct.-Nov. NACIC/NACSEX (North-American-Cuban Scientific Exchange): Field work, Salina Bido, Matanzas; Short course at the Pedagógico (Enrique José Varona) and Cuban Academy of Sciences, Havana.
- 1984. Field work, Laguna Figueroa, Baja California Norte, Mexico.
- 1985. Lakes Banyoles and Cisó, Girona, Spain.
- 1986. Laguna Figueroa, Baja California Norte, Mexico.
- 1988. Laguna Figueroa, Baja California Norte, Mexico.
- 1989. Laguna Figueroa, Baja California Norte, Mexico.
- 1990. Laguna Figueroa, Baja California Norte, Mexico.
- 1991. Laguna Figueroa, Baja California Norte, Mexico; Guerrero Negro, Baja California Sur, Mexico; Delta del Ebro, Spain.
- 1992. Laguna Figueroa, Baja California Norte, Mexico; Guerrero Negro, Baja California Sur, Mexico; Delta del Ebro, Spain.
- 1993. Delta del Ebro, Spain; Sippewissett Marsh, Cape Cod, Massachusetts.
- 1995. Teaching. El Albúfero, Valencia, Spain.
- 1997. Estero "el Pozo", Estero "la Tovar": Nayarit, Mexico; Delta del Ebro, Spain.
- 1998. Banyoles, Lake Cisó, Girona, Spain.

- 1999. Santa Pola, Alicante, Spain, Es Tremp, Mayrca.
- 2001. Tiputini Biodiversity Station Amazonas and Quito area Ecuador.
- 2002. Mayaguez, Ponce, Puerto Rico.
- 2003. Crete Coast near Heraklion.
- 2007. Erfoud, Morocco.
- 2008. Mayaguez, Ponce, Puerto Rico.

LANGUAGES:

Spanish, French (speaking and reading), Italian (speaking, reading, translation of scientific materials into English at a slow rate), Portuguese (translation of scientific materials into English at a slow rate).

EMPLOYMENT HISTORY:

- 1963-1964. Research Associate, Department of Biology, Brandeis University, Waltham, MA.
- 1963-1965. Lecturer, Department of Biology, Brandeis University, Waltham, MA.
- 1963-1967. Consultant, staff member. The Elementary Science Study (ESS), Educational Services Incorporated (ESI).
- 1965-1966. Biology Coordinator, Peace Corps Colombia Project (Brandeis University). Teacher training and retraining in mathematics and science (summer).
- 1966-1967. Adjunct Assistant Professor, Department of Biology, Boston University.
- 1967-1971. Assistant Professor, Department of Biology, Boston University.
- 1971-1977. Associate Professor, Department of Biology, Boston University (tenure, 1973).
- 1977-1986. Professor of Biology, Boston University.
- 1978. Instructor, Chatauqua short course, Hartford, CT. NSF program (with Cyril Ponnampuruma).
- 1980. January-March. Visiting Professor, Department of Marine Biology, Scripps Institute of Oceanography, La Jolla, CA. University of California, San Diego.  
March-June. Visiting Professor of Paleobiology, California Institute of Technology, Pasadena, CA. Division of Geology and Planetary Science.  
July-August. NASA-Ames, Planetary Biology Microbial Ecology, summer research course (faculty), University of Santa Clara, Santa Clara, CA.
- 1981-2011. Co-administrator of Planetary Biology Internship (PBI), with John Stolz (1981-1984), David Bermudes (1984-1985) and Michael Enzien (1985-1989), Gregory Hinkle (1990-1991), Lorraine Olendzenski (1992-1994), Michael Dolan (1995- ).
- 1982. July-August. NASA-Ames, Planetary Biology Microbial Ecology, summer research course (co-director), University of Santa Clara, Santa Clara, CA.
- 1983. Instructor, Chatauqua short course, Amherst, Mass., NSF Program (with Betsey Dyer).
- 1984. July-August. NASA-Ames, Planetary Biology Microbial Ecology, summer research course (co-director), San Jose State University, San Jose, CA.
- 1985, 1986. June-September, January-April. Visiting Professor, Departamento de Microbiología, Universidad Autónoma de Barcelona (Bellaterra), Spain.
- 1986. May. Visiting Scholar, Marine Science Research Center, State University of New York, Stony Brook, Long Island, NY.
- 1986-1988. University Professor, Department of Biology, Boston University, Boston, MA.
- 1988. January. Visiting Professor, Departamento de Microbiología, Universidad Autónoma de Barcelona (Bellaterra), Spain.  
September. Visiting Professor, Boston University Marine Program. Woods Hole, MA. Symbiosis course.
- 1988-1993. Distinguished University Professor, Department of Botany, University of Massachusetts, Amherst, MA.
- 1993-1997. Distinguished University Professor, Department of Biology, University of Massachusetts, Amherst, MA.
- 1994. September. Visiting Professor, Boston University Marine Program. Woods Hole, MA. Symbiosis course.
- 1995. September-December. Visiting Professor, George Mason University, Fairfax, VA. Protist Evolution course.
- 1997. November-December. Visiting Professor, Boston University Marine Program. Woods Hole, MA. Symbiosis course.
- 1997-2011. Distinguished University Professor, Department of Geosciences, University of Massachusetts, Amherst, MA.
- 1999. November-December. Visiting Professor, Boston University Marine Program. Woods Hole, MA. Symbiosis course.

2003. January. Visiting Professor, Center College, Danville, KT. Natural science course.  
 2004. Adjunct Professor, Department of Microbiology, University of Massachusetts-Amherst, MA.  
 2008-2009 October-June. Visiting Professor, Oxford University, Balliol College, United Kingdom.

## SABBATICALS:

1973. Autumn, University of Washington, Seattle, Departments of Microbiology and Zoology.  
 1983. Autumn, Boston University; Havana, Cuba (Cuban National Academy of Sciences).  
 1986. Spring, Boston University; Barcelona (invited by Spanish government).  
 1997. Autumn, University of Massachusetts.

## COMMITTEES AND EDITORIAL ASSIGNMENTS:

- National Academy of Sciences ad hoc Committee on Exobiology (1974-1976).  
 AAAS Electoral Nominating Committee (1974).  
 Space Science Board, National Academy of Sciences--Committee on Lunar and Planetary Studies (1975-1977).  
 Chairman, ad hoc Committee on Outer Planet and Satellite Contamination (Uranus, Titan, Neptune) (1976-1977).  
 Space Science Board Member (1977-1980).  
 Chairman, Space Science Board Committee on Planetary Biology and Chemical Evolution (PBCE) (1977-1981).  
 Associate Editor: **Precambrian Research** (Elsevier) (1979-1996), **The Biological Bulletin**, (2007- 2011).  
 Editorial Boards: Endocytobiosis and Cell Research (1984-1993), Journal of Molecular Evolution (1980-1984), Journal of Theoretical Biology (1979-1984), Origins of Life (1981-1987), Symbiosis (1985-2011 ), BioSystems (1979-1993), International Microbiology, (1998-2011).  
 American Association for the Advancement of Science, Section G, Member-at-large (elected) (1981-1984).  
 NASA Workshop on Global Habitability (June 1982).  
 NASA Advisory Council Member (1982-1986).  
 Commonwealth Fund Book Committee (Lewis Thomas, Chairman) (1982-1993).  
 Mission of NASA Committee (1983).  
 MacArthur Foundation Fellowship Nominating Committee (1982-1983; 1997).  
 Associate Managing Editor, **BioSystems** (1983-1993).  
 National Academy of Sciences, Advisory Board of the National Science Resources Center (NSRC) (1987-1994); Executive Committee (1994-1999).  
 American Association for the Advancement of Science, Section G, President-elect, president, past-president (1989, 1990, 1991).  
 Executive Council, International Society for the Study of the Origins of Life (ISSOL) (1989-1992).  
 Earthwatch, Advisory Council Member (1991-1998).  
 Mellon Foundation, Massachusetts Institute of Technology (MIT), Science, Technology and Society - History of Life Sciences Program, Advisory Committee (1991-1994).  
 Smithsonian Air & Space Museum film, "Cosmic Voyage", Advisory Committee (1991-1995).  
 National Academy of Science video, "Space Age", Advisory Committee (1991).  
 Harvard University, Dept. of Organismic and Evolutionary Biology, Visiting Committee (1991-1992; 1994-1997).  
 Microcosmos Project, Boston University School of Education, International Board of Directors (1989-1997).  
 The International Society for the Study of the Origin of Life, Councilor (1989-1993).  
 Canadian Biodiversity Institute, Board of Directors (1997-1998).  
 International Symbiosis Society, Councilor (1997-1999).  
 National Center for Science Education, Inc., Supporter (1999).  
 NASA Institute for Advanced Concepts (1999-2001).  
 NAS Walcott Award Committee (2002).  
 Sigma Xi Executive Board (2006-2007).

## INTERNATIONAL INVITED LECTURES (title of presentation):

1970. Pont-à-Mousson, France: The Origin of Life, 3rd International Conference (Origins of cells).  
 London, United Kingdom: Museum of Natural History (Origins of cells).  
 1972. Montreal, Canada: 24th International Geological Congress (Microbial mats).  
 1973. Barcelona, Spain: 1st ISSOL Meeting, International Society for the Study of the Origin of Life (Origins).  
 1974. Bristol, United Kingdom: Society for Experimental Biology, Symposium 29 (Symbiotic theory of the origin of eukaryotic

- organelles: Criteria for proof).
1975. Beerse, Belgium: International Symposium on Microtubules and Microtubule Inhibitors (*Stentor*; Evolution of mitosis). Leningrad, USSR: International Botanical Congress (Origins of cells).
1977. Mainz, Germany: Influence of the biosphere on the atmosphere (Gaia). Banyuls-sur-Mer, Villefranche-sur-Mer, Gif-sur-Yvette, Paris and Orsay, France (Microtubules and spirochetes) (in French).
1978. London, United Kingdom: Royal Society (Symbiotic spirochetes).
1979. Mexico City, Mexico: (Evolución celular) (in Spanish).
1980. Paris, France: Télévision Nationale Francaise (in French).  
Grasse, France: Biologie et la Terre, summer school (Formation des systèmes planétaires).  
Berlin, Germany: Dahlem Conference on Mineral Deposits and Evolution of the Biosphere.
1981. Sassari, Italy: Congress, European Molecular Biology Organization (Microtubules in microorganisms).
1982. Mexico City, Mexico: International Geological Correlation Program, Projects 157 and 160, The Precambrian (Microbial mats).  
Renesse, Netherlands: International Symposium on Biomineralization (Protist minerals).  
Barcelona, Spain: Universidad de Barcelona, inauguration of new biology building.
1983. Havana, Cuba: Academia Nacional de Cuba, 3 lectures (in Spanish).  
Banyuls-sur-Mer, France: International Society for Evolutionary Protistology (*Paratetramitus*).  
Mainz, Germany: Fourth Meeting, International Society for the Study of the Origin of Life (ISSOL).  
Lund, Sweden: International Congress on Coevolution of Animals and Plants (Origins of cells).  
Havana, Cuba: Cuban Academy of Sciences, two weeks of courses and ten lectures.  
Plymouth, United Kingdom: Marine Biological Association (Gaia and microbial mats).
1984. University of Puerto Rico, Mayagüez, La Parguera: 5 invited lectures on cell evolution.  
Ensenada, Baja California, Mexico: Centro de investigaciones científicas y educación superior de Ensenada (Tapetes microbianos).  
Mexico City, Mexico: Universidad Nacional Autónoma de México, Departamento de Divulgacion de Ciencia.
1985. Ottawa, Ontario, Canada: International Society for Evolutionary Protistology (ISEP).  
Bristol, United Kingdom: Society for Experimental Biology, International Conference.  
Villefranche-sur-Mer, France: Cell Motility Symposium (Evolution of motility).  
Salamanca, Spain: Universidad de Salamanca, Microbiology department (Cell evolution).  
Barcelona, Spain: Universidad de Barcelona (Cell evolution).  
Madrid, Spain: Fundación Areces (Archaeobacteria and microbial evolution).  
Valencia, Spain: (Tapetes microbianos; La célula eucariótica).  
Venice, Italy: Global Environmental Research Organization (Man's role in changing the global environment).
1986. Cambridge, United Kingdom: Darwin College (Origins of life).  
Orsay, France: (Origin de motilité cellulaire).  
Oldenburg, West Germany: (Microbial mats and Gaia).  
Zurich, Switzerland: University of Zurich biology faculties (Symbiosis as a mechanism of evolution).  
Venice, Italy: Global Environmental Research Organization (Microbial communities: From cells to planetary surfaces).  
Brussels, Belgium: Inst. voor Hygiene en Epidemeologie (Spirochetal origin of undulipodia).  
Berkeley, Calif., USA: 5th ISSOL Meeting (International Society for the Study of the Origin of Life) (Symbiosis in evolution).
1987. Eilat, Israel: (Symbiosis and the origin of neosemes).  
Rehovot, Tel Aviv, Israel: Weizmann Institute (Spirochetal origin of undulipodia).  
London, United Kingdom: Royal Society, Systematics Association (Secession of protoctista from the plant and animal kingdoms).  
Bellaterra—Barcelona, Spain: Council of Europe, Intensive Course (Early evolution of cells).  
London, United Kingdom: International Society for Evolutionary Protistology (ISEP) (Spirochetal origin of undulipodia).  
Cornwall, United Kingdom: Worthyvale Manor (Microbial mechanisms of Gaian control).  
Turin, Italy: NATO workshop (Cell-to-cell signals in plant, animal and microbial symbiosis).  
Paris, France: First French Congress of Sedimentology (Sedimentation et la vie commune ancienne microbienne).  
Barcelona, Spain: Museo de la Ciencia (Influencia de la vida sobre el planeta tierra).  
Barcelona, Spain: Universidad de Barcelona, Departamento de Geologia, dedication of new geology building, (Early life

- on Earth).
1988. Perugia, Italy: International center for epistemological studies (Gaia and microbial mats, spirochetes and brain).  
 Perpignan, France: Les journées Edouard Chatton (Des procaryotes aux protistes eucaryotes).  
 Groningen, The Netherlands: Groningen University (Gaia and the early evolution of life).  
 Barcelona, Spain: University of Barcelona (Morphology of large symbiotic spirochetes).
1989. Cambridge, United Kingdom: 113th Meeting of the Society for General Microbiology, Cambridge University (Evolution of earliest eukaryotes).  
 Moscow, USSR: Moscow University (Evolution and symbiosis).  
 Leningrad, USSR: Leningrad State University (Symbiosis in cell evolution).  
 Leningrad, USSR: Institute of Cytology (Origin of undulipodia from symbiotic spirochetes?).  
 Madrid, Spain: Universidad Autónoma de Madrid (Influencia de la hipótesis de Gaia en los conceptos de evolución).  
 Milan, Italy: Università Degli Studi di Milano (Symbiosis as a mechanism of generating evolutionary novelty) (in Italian).  
 Turin, Italy: *Experimenta '89 Pianeta Vita* (Gaia and biospheres).  
 Lyon, France: Endocytobiology IV, the IVth International Colloquium on Endocytobiology and Symbiosis (Serial endosymbiosis theory: Origins of intracellular motility systems).  
 Ottawa, Ontario, Canada: Science '89—Canada's Future Science Teachers of Ontario (Science is not reading from a textbook).  
 Barcelona, Spain: Societat Catalana de Biologia (Simbiogenesis: Generacion de novedades biológicas por simbiosis).  
 Worthyvale Manor, Cornwall, United Kingdom: The Third Annual Symposium on the Gaia thesis and its Implications, Wadebridge Ecological Centre (Symbiogenesis and Gaia).
1990. Canary Islands, Spain: Santa Cruz de Tenerife, Universidad Internacional Menendez Pelayo (Arqueobacterias y el origen del nucleocitoplasma).  
 Salamanca, Spain: 25 Años de Biología en la Universidad de Salamanca (Arqueobacteria y los cinco reinos; Gaia y evolución).  
 Spoleto, Italy: Science and culture. *Festivale di Spoleto (Nascita della vitta)* (in Italian).  
 Seville, Spain: Universidad Internacional Menendez Pelayo (El hombre como comunidad microbiana).
1991. Frankfurt, Germany: Johan Wolfgang Goethe-Universität (Symbiosis, sex and the evolution of cells; Gaia as living Earth from space: Importance of microbial communities).  
 Barcelona, Spain: Societat Catalana de Biologia (Simbiogènesis y biologia molecular; Las comunidades bacterianas y los Protoctista; Los grandes grupos de organismos: Monarquía o república?).  
 Lake Como, Italy: Bellagio Rockefeller Foundation Study Center (Gaia; Nature walks).
1992. Valencia, Spain: Universitat de Valencia (Simbiogènesis y simbioticismo como mecanismos evolutivos).  
 Amsterdam, The Netherlands: University of Amsterdam (Biodiversity: Molecular biological domains, symbiosis and origins of higher taxa).  
 Alfred Nobel's Björkborn, Karlskoga, Sweden: Nobel Symposium 84. Early Life on Earth (Combinatorial generation of taxonomic diversity).  
 Taormina, Sicily, Italy: University of Messina, European Science Foundation (Microbes, minerals and early Earth: Co-evolution of the organic and inorganic world).  
 Barcelona, Spain: ISME-6 (International Society for Microbial Ecology) (Individuals as microbial communities); Consell Superior, Centre D'Investigació: Desenvolupament (Simbiogenesis: Mecanismo de la evolución).  
 Copenhagen, Denmark: Royal Danish Academy of Sciences and Letters, 250 Anniversary Symposium: Biodiversity in a Changing World (Biodiversity and symbiogenesis: From species to kingdoms).  
 Edinburgh, Scotland: University of Edinburgh (Symbiosis and speciation).  
 Cambridge, United Kingdom: King's College, Science for the Earth (A pox called man).  
 Leiden, The Netherlands: University of Leiden (Symbiogenesis and the origin of species).  
 Nijmegen, The Netherlands: Vakgroep Microbiologie en Evolutiebiologie, University of Nijmegen (Origins of species: Importance of symbiogenesis).  
 Lancaster, United Kingdom: British Ecological Society (Symbiogenesis: Origins of species and higher taxa).  
 London, United Kingdom: Royal Entomological Society (Origins of species via symbiogenesis).
1993. Edinburgh, Scotland: University of Edinburgh. International Science Festival.  
 Santa Maria di Imbaro, Italy: 7th Conference and General Assembly of International Federation of Science Editors (What to do about standards for 30,000,000 nonhuman species of organisms?).  
 Barcelona, Spain: 7th International Society for the Study of the Origin of Life (ISSOL) 10th International Conference of

- the Origin of Life (Symbiogenesis and species origin).  
 Oslo, Norway: Society of Parasitology. XIV Symposium Lecture (Parasitism and parasitology: Anachronistic flags).  
 Barcelona, Spain: Museum of Science (Los microorganismos: Evolución, domesticación y origen de especies). University  
 of Barcelona, Dept. of Microbiology (De *Spirosymplokos* a undulipodia). Universitat Pompeu Fabra, School of  
 Journalism (Gaia y la evolucion de la vida: Papel de los microorganismos en la biosfera).  
 Madrid, Spain: Autonomous University of Madrid (Origen de las especies: Simbiosis y microcosmos).  
 Uppsala, Sweden: Uppsala University (Origins of species: Evolution by symbiosis).  
 Stockholm, Sweden: Stockholm University (Symbiogenesis: Evolution of cells).
1994. Oxfordshire, United Kingdom: Green College, Oxford University (A Century Without Symbiogenesis is Enough).  
 Uppsala, Sweden: Uppsala University (Origins of Species: Evolution by Symbiosis).  
 Stockholm, Sweden: Stockholm University (Symbiogenesis: Evolution of cells).  
 London, United Kingdom: The Linnean Society (Hogg's Protoctista).  
 Edinburgh, Scotland: Edinburgh International Science Festival (Science and Environment).  
 Oxfordshire, United Kingdom: Green College, Oxford University (The self-regulating Earth).  
 Tokyo, Japan: NTT DATA, "New Paradigm Session" (From Microbe to Gaia: Symbiosis and Humanity).  
 Valencia, Spain: University of Valencia (Are there irresoluble enigmas in the origin of life problem?; Symbiogenesis: The  
 Basis of Individuality and Speciation).  
 San Sebastian, Spain: University of the Basque Country (Evolucion celular).  
 Halifax, Nova Scotia, Canada: (ISEP) International Society for Evolutionary Protistology (Symbiogenesis); Canadian  
 Institute for Advanced Research (Cleveland was correct; cell mergers, symbiont strife as conciliation became sex).  
 Vancouver, British Columbia, Canada: University of British Columbia (Symbiogenesis and Species Origins; Gaia: The  
 Living Earth from Space; Power to the Protoctists, Our Ancestors); Simon Frazer University (Power to the Protoctists,  
 Our Ancestors).  
 Barcelona, Spain: Universidad Autónoma de Barcelona (El Origen de la Vida y de la Célula).
1995. Madrid, Spain: 1st Bioscience Symposium (Molecular and organismal biodiversity: The new frontier).  
 Bahamian Field Station, San Salvador Island, Bahamas: (Biodiversity and its five kinds of beings: It's time to put life back  
 into biology).  
 Valencia, Spain: UIMP Summer Course. (Procarionts: Eucarionts; Les cèl·lules eucariotiques com communitats  
 microbianes).  
 Barcelona, Spain: International Federation of Science Editors, IFSE-8 plenary lecture. (Science for the year 2010).  
 Bergen, Norway: University of Bergen (Symbiogenesis and the origins of eukaryotic cells: 30 years later; Bacterial  
 ancestry of motility organelles).  
 Laxenberg, Austria: Institute for Applied Systems Analysis, Tjalling Koopmans Distinguished Lecture Series (What Is  
 Life?).  
 The Hague, Netherlands: Beijerinck Centennial (Evolution of cell organelles).  
 Barcelona, Spain: Societat Catalana de Biologia University of Barcelona (Comunidades microbianas: El origen del  
 individuo).
1996. Oxford, United Kingdom: Gaia in Oxford II (Symbiogenesis: Organism/superorganism to ecosystem/Gaia).  
 Devon, United Kingdom: Schumacher College summer course (Gaia theory & living systems: From macrocosm to  
 microcosm).  
 Belfast, Ireland: Linnean Society (The meaning of microbes: How do we preserve knowledge?).  
 Paris, France: Collège de France (Evolution by symbiosis).  
 Montreal, Canada: Kefir Symposium (Kefir and symbiosis) (Symbiosis and the living Earth from space).  
 Hamilton, Ontario, Canada: McMaster University (Archeal-eubacterial merger in eukarya origin).
1997. Barcelona, Spain: Museum of Science (What is life?).  
 Montreal, Canada: University of Montreal (Symbiogenesis).  
 Gothenburg, Sweden: NFR Forum of the Origins of Life (Eukaryosis as symbiogenesis: Cells from bacterial communities).  
 Nuevo Leon, Mexico: Autonomous University of Nuevo Leon (Simbiogénesis en el origen de la célula eucariótica).  
 Valencia, Spain: University of Valencia (¿Que is la vida?); Symposium of Cryptogramic Botany (La vida fotosintetica:  
 Simbiogenesis y los origines de las algas).  
 Guelph, Ontario, Canada: University of Guelph (Symbiogenesis: Bacterial consortia in the origins of eukaryotes).  
 Madrid, Spain: Centro de Investigaciones Biológicas (Symbiogenesis en el origen de la celula).  
 Valencia, Spain: Bancaja Foundation (Gaia y evolucion ambiental).

1998. Barcelona, Spain: Instituto de Investigaciones Pesqueras, La Barcelonata (Symbiosis y evolucion).  
 Girona, Spain: Institut d'Ecologia Aquàtica, Universitat de Girona. (Papel de las bacterias en la simbiogénesis y la evolución).  
 Madrid, Spain: Autonomous University of Madrid (Discurso: Una revolución en la evolución).  
 Madrid, Spain: Autonomous University of Madrid Origins of species and evolutionary changes (Symbiogenesis and molecular evolution: Future).  
 Malaga, Spain: Vicerrectorado de Investigación Universidad de Málaga (Simbiogénesis y evolución).  
 Montpellier, France: 16th World Congress of Soil Science (Invited commentator on “aims of soil science”).  
 Cortona, Italy: Cortona Week XI: Future and future vision (From Gaia to microcosm).  
 London, United Kingdom: Linnean Society: Gaia perspectives 1998 (Gaia: The Earth as seen from space).
1999. Barcelona, Spain: Museum of Science (What Is Sex? Spanish edition).  
 Banyuls sur mer, France: Université Pierre et Marie Curie, Observatoire Oceanologique de Banyuls Laboratoire Arago (Evolution of sexuality).  
 Alicante, Spain: (Gaia: La tierra viva desde el espacio).  
 Tübingen, Germany: University of Tübingen Crafoord Lecture (Gaia: Ancient symbiosis as seen from space).  
 Oldenburg, Germany: University of Oldenburg, Honoris Causa (Science of our living Earth: From Archean ecology to Proterozoic prototists).  
 Oban, Scotland: Scottish Association for Marine Biology (Speciation via Symbiosis; Symbiosis and living sands).  
 Zaragoza, Spain: Cajal and Consciousness (The conscious cell).
2000. Barcelona, Spain: Museum of Science (Roundtable “On complexity”).  
 Stellenbosch, South Africa: University of Stellenbosch (Symbiotic planet: A new look at evolution; Evolution by symbiosis).  
 Edinburgh, Scotland: International Science Festival (Evolution of cells and the need for religion).  
 London, United Kingdom: Imperial College (Symbiosis and natural selection).  
 Alcobendas, Spain: CosmoCaixa, Visperas de Ciencia (Biosfera: Influencia del origen y la evolución de la vida en el medio ambiente).  
 Valencia, Spain: Gaia 2000 Conference (Gaia becomes respectable: Modes of confirmation of “Gaia theory”).  
 Barcelona, Spain: University of Barcelona (What physicists need to learn from biologists: Movement and deep time).  
 Ballyvaughan, Galway, Ireland: ESF-CYANOFIX (Endosymbiosis and the evolution of organelles).  
 La Paz, Mexico: Center for Biological Research of the Northwest (Gaia y el microcosmos: Evolucion de la celula).  
 Barcelona, Spain: Societat Catalana de Biologia (Origen de las especies por simbiogenesis).  
 Universidad Central de Barcelona, Microbiology class (Espiroquetas: Diversidades y complejidades) Guadalajara, Mexico: (Symbiosis and evolution).
2001. Madrid, Spain: Origins of Species Conference (El origen de las especies).  
 Quito, Ecuador: Universidad San Francisco de Quito, Commencement Address (Simbiogenesis y el origen de las especies).  
 Valencia, Spain: University of Valencia (Los primeves protistas and Origen de les especies y adquisicion de genomas).  
 Zurich, Switzerland: Collegium Helveticum, Eidgenössische Technische Hochschule Zurich, Department of Microbiology. (Microbial Weltanschauung: From Bacteria to Biosphere); Scientist in Residence, Chair: Toward a Theory of Life Symposium (Evolutionary innovation and the origin of species); Seminar (Social context of science); Teacher-training workshop: (The carbon cycle: What happens to trash and garbage?); Raths Steiger Lecture: (Symbiogenesis in the Evolution of Life).  
 Barcelona, Spain: Sala de Actos, Parc Científic de Barcelona. International Symposium: New Frontiers in microbial ecology and international activities of ASM (Symbiogenesis and Evolution).  
 Madrid, Spain: Museum of Science Exhibits, Museu de la Ciència. (El origen de las especies).  
 Mallorca, Spain: (Symbiogenesis y celulas)  
 Barcelona, Spain, Sex Evolution Debate, Museu de la Ciència de la Fundació “La Caixa” (Early Sex-origen sexualidad).  
 Braunschweig, Germany: Congress Life in tomorrow’s world: Lifecycle engineering and industrial ecology. (Evolutionary Innovation and Biospheric Ingenuity)
2002. Delmenhorst, Germany: Hanse Institute of Advanced Study (Before species: Environmental evolution on early Earth)  
 Bamberg, Germany: 30<sup>th</sup> Symposium for AvH Research Awardees (Symbiogenesis and symbiointicism, not random mutation, as source of Darwin’s inherited variation).  
 Oldenburg, Germany: University of Oldenburg, ICBM-Kolloquium (Eukaryosis).  
 Amsterdam, The Netherlands: Royal Netherlands Academy of Arts and Sciences Biogeology Symposium (Gaia and



- biochemistry).
- Madrid, Spain: Universidad Complutense Madrid (El flujo de Energia y la Vida).
- Barcelona, Spain: Museum of Science (Learning about genetics—dialogue with Dr. Maria Arca).
- Bremen, Germany: Wurtzburg Lecture (Amber, termites and the origins of cells).
- Wurtzburg, Germany: Biozentrum Lecture (Evolution of cells).
- \*Bamberg, Germany: 30<sup>th</sup> Symposium for A.v. Humboldt Research Awardees (Symbiogenesis and symbiogenesis, not random mutation, as source of Darwin's inherited variation).
- Dusseldorf, Germany: Seminar with Bill Martin. (Origin of the nucleus).
- Tarragona, Spain: La Caixa Cultural Center (Gaia y el origen de las especies).
- Leridea, Spain: La Caixa Cultural Center (Adquisicion de genomes: Una teoria del origen de las especies).
- Berlin, Germany: Frei Universitat Berlin (Termite symbionts).
- Bremen, Germany: Bremen University (Science education).
- Berlin, Germany: A.v. Humboldt Research Fellowship residency (Gaia view of the Earth).
- Oaxaca, Mexico: ISSOL Conference (Cell motility and of the origin of Centrioles; From Microcosmos to Gaia).
- Monerray, Mexico: Universidad Autónoma de Nuevo Leon, Monterrey Mexico (Symbiogenesis y Evolucion).
- Ponce, Puerto Rico: Universidad Catolica de Puerto Rico (Symbiogenesis y el origen de las especies).
- Montreal, Canada: Quebec University of Montreal (Thiodendron"—like consortia to chimeric archaeoprotists).
- Barcelona, Spain: University of Barcelona (Cell structure and spirochete communities: *Thiodendron* and *Mixotricha*).
- Valencia, Spain: Universitat de València (Una revolución en la evolución).
- Barcelona, Spain: Museu de la Ciència de la Fundació "la Caixa" (Peces Luminosos: Historias de ciencia y amor).
2003. Barcelona, Spain: Palau Vireina Barcelona Banquete (Comida y la complejidad del individuo); Palau Macaya, Museum of Science temporary location, (Sculpture of the tree of life); Palau de la Musica Via Laiatana (Science as a Culture, Science As a way of knowing).
- Valencia, Spain: University of Valencia Bujassot Campus of Science (Honoris Causa series).
- Oslo, Norway: The 16<sup>th</sup> Kongsberg Seminar, Norwegian Geoscience Centre, The Rosenqvist Lecture (Gaia: The living Earth from space); Sackler Lecture (Cell evolution in the Proterozoic Eon).
- Madrid, Spain: Fundación Ramón Areces ASM (El universo microbiano: De millas a micras; The microbial universe: From miles to microns).
- Halifax, Canada: Fourth international Symbiosis Congress, St. Mary's College, (Bacterial integration and evolutionary innovation).
- La Coruña, Spain. XV Bienal de la Real Sociedad Española de Historia Natural, (Simbiosis en Evolucion).
- Madrid, Spain: Las culturas de la ciencia y la tecnología, Conferencia inaugural del seminario, Eulalia Lecture (Gaia y la evolución de las máquinas); Banquete Lecture (Hunger and Ecosystems).
- Barcelona, Spain: Catalan Foundation for Research (Talks with Lynn Margulis, a dialogue with Prof. R. Guerrero); Aula European School (Symbiogenesis and photosynthetic animals: Development of an idea that has changed biology).
2004. Barcelona, Spain: Institut de Ciència del Mar, Seccio de Microbiologia SCB (Ecologia microbiana proterozoica: simbiosis y origen del nucleo).
- Bellagio, Italy: Rockefeller Foundation Bellagio Study and Conference Center (Cell evolution: Mitotic motility and sensory cells).
- Madrid, Spain: American Society for Microbiology and Fundación Ramón Areces meeting. (El universo microbiano: De millas a micras).
- Devon, United Kingdom: Schumacher College summer course (Earliest ecosystems and the microbe's contribution).
- Barcelona, Spain: Word Women's Forum, (A new culture of living and living together; To rethink the world).
- Seville, Spain: Huelva la Rabida Course (Contribucion de los microbios a la evolucion). Leiden, The Netherlands: Institute of Biology, Leiden University; Acquired Genomes Symposium (Evolutionary Consequences of Endosymbiosis: Origin of the nucleus).
- Vienna, Austria: Third International PhD Symposium, Institute of molecular Pathology (Composite Individuality. Transition from bacterial to eukaryote genomes).
- Genoa, Italy: Festival of Science (Life on Earth: A bacterial view).
- Madrid, Spain: Centro de Investigaciounes Biológicas: Centro de investigaciones, Alcalá (Integración de genomias y formación de nuevos individuos); Biologicas (CIB) (Simbiogenesis y Inovacion).
- Barcelona, Spain: Department of microbiology, Barcelona University (Origen de la celula eucariotica).
2005. Madrid, Spain: Banquete: metabolismo y comunicación (Bacterial Communication).

- Tokyo, Japan: The NISTEP International Conference “Seamless culture through science communication” (Doing science as a way of knowing: Living sands and the epic of evolution).
- Quito, Ecuador: Univeristy of San Francisco Quito, lecture (Evolution of Cells and Spirochetes and the origin of undulipodia) and hands-on science course (Foram and Trash & Garbage).
- Galapagos, Ecuador: World Summit on Evolution (Evolution by symbiosis).
- Barcelona, Spain: Co-teach course at the Llull School, Microbiologia de la Universitat de Barcelona (Microbis, amics o enemics?).
- Edinburgh, Scotland: Royal Society of Edinburgh Program on Sustainable Environment, Opening lecture (Compote individuality).
- La Coruña, Spain: III Congress on Social Communication of Science, Sin ciencia no hay cultura, Keynote lecture (Arenas Vivas: las foraminíferas), pp. 27-32.
- Mexico City, Mexico: Universidad Nacional Autónoma de México (Evolucion: Ni competencia ni co-operacion) Sigma Xi instillation.
2006. Barcelona, Spain: Center of Contemporary Culture of Barcelona (CCCB) conferences: Life: Reflections of the Limits of Human Nature (What is Life?).
- Madrid, Spain: Museo de la Cinidad, Science and Society conference lecture series, Enigmas to discover (Evolucion de la Vida).
- Barcelona, Spain: Cicle de conferències magistrals. Curs 2005-2006, Academy of Sciences and Humanities of the Catalan territories, Secretaria Científica (Vida y evolución, 150 años despues de Darwin)
- Vienna, Austria: Fifth International Symbiosis Society Congress (5-ISS) (Evolution and group selection: Termite microbes in the origin of eusociality).
- Luxenburg, Austria: International Institute for Applied Systems Analysis, Young Scientist Summer Program, Philosophy in Science (Slanted truths and life’s evolution: The scientific search for truth even if we don’t like what we find).
- Pavia, Italy: Festival dei Saperi, 100<sup>th</sup> year celebration of Golgi (Life and Evolution, 150 years after Darwin).
- Paris, France: UNESCO Foundation for the Future on Humanity and the Biosphere, (Names of Life and its Parts: Fallacies of Misplaced Concreteness or homage to A. N. Whitehead).
- Oslo, Norway: Norway national science festival Small Molecules-Crucial Questions (Early Life: Evolution of cells from bacteria).
2007. Barcelona Spain: Institute of Marine Sciences, ICM- Inst. de Ciències del Mar (Origen del nucleo).
- Bellaterra Spain: Universitat Autònoma de Barcelona (Revolución en la evolución).
- Zaragoza, Spain: Instituto de Ciencia de Materiales de Aragón, CSIC-Universidad de Zaragoza (Una revolución en la evolución).
- Barcelona Spain: Museu de la Ciencia, Fundacio "la Caixa (Infrenable pasion por los escarabajos).
- Vigo, Spain: Universitat de Vigo, Galicia (Seres vivos y fosiles: Relación entre su evolucion y sistemas de clasificación).
- Valencia, Spain: City of Valencia, Oceanografica (El origen de la célula eucariótica).
- Rabat, Morocco: Royal Academy of Morocco, Institut d'Estudis Catalans, Pathways of Human Dignity: from cultural traditions to a new paradigm, Invited lecture (Dignity: The individual and the tribe).
- London, United Kingdom, Geological Society of London Bicentennial Conference, Keynote lecture (Evolution of life in the Phanerozoic Eon, Origin of our cells).
- Monterrey, Nuevo Leon, Mexico: Fórum universal de las culturas, Universidad Autonoma de Nuevo Leon, Invited lecture (Gaia long before man: Origins of cells).
- Madrid, Spain: Invited lecture, Spanish Foundation for Science and Technology, Fundación Española para la Ciencia y la Tecnología series of lectures-Women also do research. (Lynn Margulis and the origin of nucleated cells).
2008. Oviedo, Spain: The 400 Anniversary Universidad de Oviedo, Invited seminar (Symbiosis in Evolution).
- Oviedo, Spain: Universidad de Oviedo, Invited public lecture (Gaia y evolucion de la celula).
- Paris, France: Metchnikoff’s Legacy: 100th anniversary of Ilya Ilyich Metchnikoff’s Nobel Prize symposium (A genome at a swallow: Recognition of self vs. other).
- London, United Kingdom: Linnean Society, Darwin Conference 150th anniversary, Invited lecture (Origin of Eukaryotes in the Proterozoic Eon: Symbiogenesis in the sulfuretum).
- Monterrey, Nuevo Leon, Mexico: Facultad de Ciencias Biologicas, Universidad Autonoma de Nuevo Leon, Invited lecture (Simbiosis y el origen de las celulas eucariontes).
- Mexico, D. F. Mexico: Facultad de Ciencias, Universidad Nacional Autónoma, Invited lecture (Simbiosis y el origen de la celulas eucariontes).

- Barcelona, Spain: Institut d'Estudis Catalans, Invited lecture (Microbialitas: Rocas formadas por microorganismos).
- Zaragoza, Spain: Expo 2008, Invited lecture (El planeta agua).
- Reading, UK: University of Reading, Invited lecture [Origin of nucleated (eukaryotic) cells].
- Berlin, Germany: Zentrum für Literatur- und Kulturforschung conference, The Culture of Evolution, Keynote lecture (Symbiogenesis in the evolution of planet Earth).
- Burgos, Spain: Conferencia XVIII Ciclo de Divulgación Científica, Cultural Cordón/Caja de Burgos Obra Social, Invited opening lecture, (Origen y evolución de las células).
- Oxford, United Kingdom: Balliol College, Oxford University, Praefectus' Seminar Invited lecture (Early Life on Earth).
- Devon, United Kingdom: Shumacher College, Invited lecture (Gaia and symbiosis).
- Oxford, United Kingdom: Oxford University Green College Lecture Series “The Origin of Species,” Invited lecture (A century without symbiogenesis is enough).
2009. London, United Kingdom: Queens College, University of London, Invited lecture (Origin of eukaryotes).
- Milan, Italy, Università degli Studi di Milano Invited lecture (Eukaryosis: Symbiogenetic origin and evolution of nucleated microbes in sulfurous Proterozoic-Eon waters).
- Rome, Italy: Biological evolution: Facts and Theories, A Critical Appraisal 150 Years After "The Origin of Species", Pontifical Gregorian University, Invited lecture (Origin of evolutionary novelty by symbiogenesis).
- Oxford, United Kingdom: Genes and the environment: Darwin and Lamarck revisited. Colloquium sponsored by Maison Française and Science Departments, Oxford University, Invited speaker.
- Lisbon, Portugal: “A Evolução de Darwin” conference, Gulbenkian Foundation, Invited lecture (Evolution on a Gaia planet: Darwin's legacy).
- Oxford, United Kingdom: Oxford University Scientific Society, Invited lecture (Early evolution of Earth's life).
- Valencia, Spain: Inaugural lecture for the Valencia Book Fair (Los inicios de la vida).
- Burjassot, Spain: Universidad de Valencia campus de Burjassot, Invited lecture (Anima: Origin of the nucleus).
- Amsterdam, The Netherlands: De Gids (Beyond Darwin: 3800 million years of evolution of life on Earth).
- Balearic Islands, Majorca: International Symposium, Darwin: 150 years of the theory of evolution, Invited lecture.
- London, United Kingdom: Gaia: the Earth Systems Science special interest group of the Geological Society of London, Invited lecture (Glimpse at our watery planet Gaia's history).
- Santiago, Chile: Darwin in Chile conference, Invited lectures (El planeta Tierra y evolución de su vida, Eucariosis orígenes de la célula)
- Guildford, United Kingdom. British Science Festival, Invited lecture (Sex or reproduction: Forbidden fertilization on the pre-Phanerozoic Earth).
- Saint Petersburg, Russia. International conference: “Charles Darwin and modern biology,” Institute of the History of Science and Technology, Russian Academy of Sciences (Symbiogenesis: Source of evolutionary novelty).
- Mayaguez, Puerto Rico. Celebration of Darwin, UPRM (Evolución en el Planeta Tierra).
- Madrid, Spain. Royal Academy of Science (Symbiogenesis the major source of evolutionary innovation).
2010. Guadalajara, Jalisco, México. Juan Luis Cifuentes Lemus (Evolucion en la Revolucion: Eucariosis).
- Pisa, Italy. Università di Pisa (Symbiogenesis, not random DNA mutations, as source of life's heritable novelty).
- Milano, Italk. Università degli Studi di Milano (Eukaryosis: Symbiogenetic origin and evolution of nucleated microbes in sulfurous Proterozoic-Eon waters).
- Ourense, Spain. Palynology Association (APLE), University of Vigo (La evolución de la vida sobre el Planeta Tierra antes de las plantas: Simbiogénesis y eucariosis).
- Stellenbosch, South Africa. Stellenbosch Institute for Advanced Study (Gaia & symbiogenesis: The living Earth from Space).
2011. Toronto, Ontario, Canada: York University. Invited lecture (Symbiogenesis in Gaia our living Earth from space).
- Papendal, Netherlands: The Dutch Society for Microbiology centenary celebration (Origin of the eukaryotic cells in the mid-Proterozoic Eon)
- London, United Kingdom: Geological Society of London, Life and the Planet: new perspectives in Earth System Science conference. Keynote lectura (Gaia and symbiogenesis).
- London, United Kingdom: Linnean Society, Rumphius symposium, Visions of plants from the blind ser of Ambon, A Celebration of Rumphius 17th century Amboinese Herbal (The allure of plant diversity -- Rumphius revealed by Beekman).
- Sansepolcro, Italy: ABOCA of the International Lectures on Nature and Human Ecology (Evoluzione: La simbiogenesi, non le mutazioni casuali nel DNA come fonte di nuovi caratteri ereditabili degli organismo).

Berlin, Germany: VI European Congress of Protistology (ECOP), Opening plenary lecture (Eukaryosis: Protist origins from bacterial communities).

AWARDS:

Boston University Faculty Publication Merit Award for 1967 (Shell) (February 28, 1969)  
 George Lamb Award, Outstanding U.S. Botanist, University of Nebraska, Lincoln (1971)  
 Diamond Award: Travel to Leningrad, for International Botanical Congress (Summer 1975)  
 Fellow of the Association, AAAS ("To Lynn Margulis, for her contributions to cell biology, in particular for her studies on the origin of eukaryotic cells") (1975)  
 NASA Public Service Award (October 1981)  
 United Methodist Church Award for Teacher Scholar, Boston University (1982)  
 Elected member, National Academy of Sciences (Section 27 Ecological and evolutionary biology) (1983)  
 University of Chicago Citation for Professional Achievement (1985)  
 Boston University MacDonal Award for Excellence in Research (1986)  
 Boston University Nominee, Nationwide Salute: American Association of Higher Education and the Carnegie Foundation for the Advancement of Teaching, for extraordinary educational leadership to the campus and beyond (1986)  
 Miescher-Ishida Award, International Society for Endocytobiology (first winner) (1986)  
 Distinguished Service Award, National Association of Biology Teachers (1988)  
 Commandeur de l'Ordre des Palmes Académiques de France (1989)  
*Honoris Causa* Doctor of Science, Southeastern Massachusetts University, North Dartmouth, MA (1989)  
*Honoris Causa* Doctor of Science, Westfield State College, Westfield, MA (1989)  
 Honorary Member Plaque, International Society for Evolutionary Protistology (ISEP), Orsay, France (1990)  
*Honoris Causa* Doctor of Science, Plymouth State College, Plymouth, NH (1991)  
 Distinguished Faculty Lecturer, University of Massachusetts, Amherst, MA (1992)  
 Chancellor's Medal for Distinguished Faculty, University of Massachusetts, Amherst, MA (1992)  
 Samuel F. Conti Faculty Fellowship, University of Massachusetts, Amherst, MA (1992)  
 Distinguished Lecturer in the Life Sciences, Boyce Thompson Institute of Plant Research, Cornell University, Ithaca, NY (1994)  
*Honoris Causa* Doctor of Science, Washington College, Chestertown, MD (1995)  
 Annual Lecturer, 95th Opening Session, ASM General Meeting, Washington, DC. (1995)  
 Elected Fellow of the World Academy of Art and Science (1995)  
*Honoris Causa* Doctor of Science, Tulane University, New Orleans, LA (1996)  
*Honoris Causa* Doctor of Science, University of Montreal. Montreal, Quebec (1997)  
 Nevada Award, Desert Research Institute, Las Vegas, NV (1998)  
 Elected Fellow of the American Academy of Arts and Sciences (1998)  
*Honoris Causa* Doctor of Science, Universidad Autónoma de Madrid, Canto Blanco, Spain (1998)  
 Distinguished Service Award, American Institute of Biological Sciences, Baltimore MD (1998)  
*Dr. rer. nat. Honoris Causa*, Carl von Ossietzky Universität, Oldenburg, Germany (1999)  
 Sigma Xi William Proctor Prize for Scientific Achievement, Minneapolis, MN (1999)  
*Honoris Causa* Doctor of Science, Union College, Schenectady, NY (2001)  
 Distinguished Academic Outreach 2000-2001, University of Massachusetts  
 Commonwealth Award, Interpretive Scientist. Massachusetts Cultural Council (2001)  
*Honoris Causa* Doctor of Science, Universidad San Francisco de Quito, Quito, Ecuador (2001)  
*Honoris Causa* Doctor, Universitat de València, València, Spain (2001)  
 Faculty Grant Award (course design grant) for video of the "Cosmos to Humanity" course (2003)  
 Nomination to the NASA Honor Group Achievement Award NIAC Science Council Member (2003)  
 Discover Magazine's 50 most important women in science (2003)  
*Honoris Causa* Doctor of Science, Rutgers University, New Brunswick, NJ (2004)  
 Rockefeller Foundation Study and Conference Center Grant, Bellagio, Italy (2004)  
*Honoris Causa* Doctor of Science, Bates College, Lewiston, ME (2005)  
 Elected Fellow of International Society to Study the Origins of Life (2005)  
*Doctor en Ciencias Honoris Causa* Universidad San Francisco de Quito, Galapagos, Ecuador (2005)  
*Honoris Causa* Doctor of Science, Tufts University, Medford, MA (2006)

*Honoris Causa* Doctor of Science, North Carolina State University, Raleigh, NC (2006)  
*Doctor en Ciencias Honoris Causa* Universidade de Vigo, Galicia, Spain (2007)  
*Doctor en Ciencias Honoris Causa* Universidad Autónoma de Barcelona, Spain (2007)  
*Honoris Causa* Doctor of Science, Syracuse University, Syracuse, NY (2008)  
 Elected Fellow of Massachusetts Academy of Sciences (2008)  
 Cristobal Gabarrón Foundation's International Science and Research Award, Valladolid, Spain (2008)  
 Darwin-Wallace Medal, Linnean Society of London, United Kingdom for “major advances in evolutionary biology since 1958” (2008)  
*Honoris Causa* in Biodiversity and Evolution, Università di Pisa, Italy (2010)  
 Faculty Convocation Award for Outstanding Accomplishments in Research and Creative Activity, University of Massachusetts Amherst, MA (2009).  
 Leonardo da Vinci Society for the Study of Thinking Medallion awarded to “individual who are among the world's greatest living thinkers”, Tempe, AZ (2010).  
 Donald Gordon STIAS Fellowship, Stellenbosch Institute for Advanced Study (STIAS), Stellenbosch, South Africa (2010)  
 Elected as Honorary member of the Saint Petersburg Society of Naturalists, St. Petersburg, Russia (2010)

#### PROFESSIONAL SOCIETIES:

Catalan Society for Biology (Member of Honor, 1986)  
 International Society for Evolutionary Protistology (ISEP, Co-founder; Honorary Life Member)  
 International Society for the Study of the Origin of Life (ISSOL, Councilor 2002-2005)  
 Marine Biological Laboratory, Woods Hole, MA (Corporation Member)  
 Sigma Xi, The Scientific Research Society (University of Massachusetts Chapter)  
 Phi Beta Kappa (University of Massachusetts)  
 Phi Kappa Phi (University of Massachusetts)  
 The Linnean Society (London)  
 International Symbiosis Society (Councilor)  
 Gaia: The Society for Research and Education in Earth System Science.  
 University of East London. (Honorary President)  
 Massachusetts Academy of Sciences, Charter member (Fellow, 2008, University of Massachusetts)

#### RESEARCH SUPPORT: Detailed list available on request.

Boston University Graduate School (1966-1969; 1972-1973; 1987-1988)  
 National Science Foundation (1968-1972; 1978-1979)  
 SGER—NSF Grant (1990-1992)  
 NASA Life Sciences (1970-1995)  
 Richard Lounsbery Foundation Research Trust Funds (1985-88; 1997-98; 1999-2003)  
 UMASS College of Natural Sciences and Mathematics (1988 -2011 )  
 NASA Space Sciences (1995-2001)  
 Tauber Fund (2004-2010)  
 Gomel Grant (2005-2008)

#### ARTICLES:

1958. Plaut, W. and L. A. Sagan. Incorporation of thymidine in the cytoplasm of *Amoeba proteus*. **Journal of Biophysical and Biochemical Cytology** 4:843-846.
1965. Sagan, L. An unusual pattern of tritiated thymidine incorporation in *Euglena*. **Journal of Protozoology** 12:105-109.  
 Sagan, L., Y. Ben-Shaul, H. T. Epstein and J. A. Schiff. Studies of chloroplast development in *Euglena*. XI. Radioautographic localization of chloroplast DNA. **Plant Physiology** 40:1257-1260.
1967. Sagan, L. On the origin of mitosing cells. **Journal of Theoretical Biology** 14:225-274.
1968. Margulis, L. Evolutionary criteria in Thallophytes: A radical alternative. **Science** 161:1020-1022.  
 Margulis, L. and T. N. Margulis. A note on the equivalence of characters: Pheneticist vs. phylogeneticist. **Systematic Zoology** 17:477-479.
1969. Banerjee, S. and L. Margulis. Reversible inhibition of cilia regeneration in *Stentor coeruleus* by isopropyl-n-phenyl carbamate. **Nature** 224:180-181.

- Margulis, L. New phylogenies of the lower organisms: Possible relation to organic deposits in Precambrian sediment. **Journal of Geology** 77:606-617.
- Margulis, L., S. Banerjee and T. White. Colchicine-inhibited cilia regeneration: Explanation for lack of effect in tris buffer medium. **Science** 164:1177-1178.
- Margulis, L., J. A. Neviackas and S. Banerjee. Cilia regeneration in *Stentor*: Inhibition, delay and abnormalities induced by griseofulvin. **Journal of Protozoology** 16:660-667.
- Neviackas, J. A. and L. Margulis. The effect of colchicine on regenerating membranellar cilia in *Stentor coeruleus*. **Journal of Protozoology** 16:165-171.
1970. Makrides, E. B., S. Banerjee, L. Handler and L. Margulis. Podophyllotoxin, Colcemid and cold temperature interfere with cilia regeneration in *Stentor*. **Journal of Protozoology** 17:548-551.
- Margulis, L. Recombination of non-chromosomal genes in *Chlamydomonas*: Assortment of mitochondria and chloroplasts? **Journal of Theoretical Biology** 26:337-342.
1971. Banerjee, S. and L. Margulis. Inhibition of cilia regeneration by antineoplastic agents. **Cancer Chemotherapy Reports Part 1** 55:531-537.
- Margulis, L. Cytoplasmic genes: Our Precambrian legacy. **Stadler Genetics Symposia** 1 & 2:79-88.
- Margulis, L. Symbiosis and evolution. **Scientific American** 224:48-57.
- Margulis, L. Whittaker's five kingdoms of organisms: Minor revisions suggested by consideration of the origin of mitosis. **Evolution** 25:242-245.
1972. Banerjee, S., V. Kerr, M. Winston, J. K. Kelleher and L. Margulis. Melatonin: Inhibition of microtubule-based oral morphogenesis in *Stentor coeruleus*. **Journal of Protozoology** 19:108-113.
- Margulis, L. Symbiose en evolutie. **Natuur en Techniek** 40:394-407.
- Younger, K. B., S. Banerjee, J. K. Kelleher, M. Winston and L. Margulis. Evidence that the synchronized production of new basal bodies is not associated with DNA synthesis in *Stentor coeruleus*. **Journal of Cell Science** 11:621-637.
1973. Banerjee, S. and L. Margulis. Mitotic arrest by melatonin. **Experimental Cell Research** 78:314-318.
- Blumberg, S., S. Propst, S. Honjo, T. Otaka, J. Antanavage, S. Banerjee and L. Margulis. Induced reversible pigment alteration in *Stentor coeruleus*. **Transactions of the American Microscopical Society** 92:557-569.
- Margulis, L. Colchicine-sensitive microtubules. **International Review of Cytology** 34:333-361.
1974. Deshpande, K. L., S. Banerjee, J. K. Kelleher and L. Margulis. Cilia membrane abnormalities induced by streptomycin and other aminoglycoside antibiotics in *Stentor coeruleus*. **Cytobios** 11:185-199.
- Lovelock, J. E. and L. Margulis. Atmospheric homeostasis by and for the biosphere: The Gaia hypothesis. **Tellus** 26:2-10. Reprinted in 1999 **Global Aspects of the Environment** 1:57-64.
- Lovelock, J. E. and L. Margulis. Homeostatic tendencies of the Earth's atmosphere. **Origins of Life** 5:93-103.
- Margulis, L. On the evolutionary origin and possible mechanism of colchicine-sensitive mitotic movements. **BioSystems** 6:16-36.
- Margulis, L. Origin and evolution of the eukaryotic cell: Introduction. [In Proceedings of the First International Congress of Systematic and Evolutionary Biology]. **Taxon** 23:225-226 [entire symposium, pp. 225-270].
- Margulis, L. and J. E. Lovelock. Biological modulation of the Earth's atmosphere. **Icarus** 21:471-489.
- Winston, M., E. Johnson, J. K. Kelleher, S. Banerjee and L. Margulis. Melatonin: Cellular effects on live stentors correlated with the inhibition of colchicine-binding to microtubule protein. **Cytobios** 9:237-243.
1975. Banerjee, S., J. K. Kelleher and L. Margulis. The herbicide trifluralin is active against microtubule-based oral morphogenesis in *Stentor coeruleus*. **Cytobios** 12:171-178.
- Margulis, L. The microbes' contribution to evolution. **BioSystems** 7:266-292.
1976. Margulis, L. A Review: Genetic and evolutionary consequences of symbiosis. **Experimental Parasitology** 39:277-349.
- Margulis, L. The theme (mitotic cell division) and the variations (protists): Implications for higher taxa. **Taxon** 25:391-403.
- Margulis, L., J. C. G. Walker and M. Rambler. Reassessment of roles of oxygen and ultraviolet light in Precambrian evolution. **Nature** 264:620-624.
- Ormerod, W., S. Francis and L. Margulis. Delay in the appearance of clamp connections in *Schizophyllum commune* by inhibitors of microtubule protein assembly. **Microbios** 17:189-205.
1977. Cooper, G. and L. Margulis. Delay in migration of symbiotic algae in *Hydra viridis* by inhibitors of microtubule protein polymerization. **Cytobios** 19:7-19.
- Margulis, L., H. O. Halvorson, J. Lewis and A. G. W. Cameron. Limitations to growth of microorganisms on Uranus, Neptune and Titan. **Icarus** 30:793-808.

- Margulis, L., H. O. Halvorson, J. Lewis and A. G. W. Cameron. Some general principles of planetary quarantine leading to an assessment of the limitations to growth of microorganisms on Uranus and Neptune. **Life Sciences and Space Research** 15:101-106.
- Walters, C. C., L. Margulis and E. S. Barghoorn. On the experimental silicification of microorganisms. I. Microbial growth on organosilicon compounds. **Precambrian Research** 5:241-248.
1978. Bold, H. C., A. Cronquist, C. Jeffrey, L. A. S. Johnson, L. Margulis, H. Merxmüller, P. H. Raven and A. L. Takhtajan. Proposal (10) to substitute the term "phylum" for "division" for groups treated as plants. **Taxon** 27:121-122.
- De Rosa, F., D. Haber, C. Williams and L. Margulis. Inhibitory effects of the herbicide trifluralin on the establishment of the clover root nodule symbiosis. **Cytobios** 21:37-43.
- Francis, S., E. S. Barghoorn and L. Margulis. On the experimental silicification of microorganisms. III. Implications of the preservation of the green prokaryotic alga *Prochloron* and other coccoids for interpretation of the microbial fossil record. **Precambrian Research** 7:377-383.
- Francis, S., L. Margulis and E. S. Barghoorn. On the experimental silicification of microorganisms. II. On the time of appearance of eukaryotic organisms in the fossil record. **Precambrian Research** 6:65-100.
- Margulis, L. and J. E. Lovelock. The biota as ancient and modern modulator of the Earth's atmosphere. **Pageoph** 116:239-243.
- Margulis, L., G. Thorington, B. Berger and J. Stolz. Endosymbiotic bacteria associated with the intracellular green algae of *Hydra viridis*. **Current Microbiology** 1:227-232.
- Margulis, L., L. To and D. Chase. Microtubules in prokaryotes. **Science** 200:1118-1124.
- Mazur, P., E. S. Barghoorn, H. O. Halvorson, T. H. Jukes, I. R. Kaplan and L. Margulis. Biological implications of the Viking mission to Mars. **Space Science Reviews** 22:3-34.
- To, L., L. Margulis and A. T. W. Cheung. *Pillotinas* and *hollandinas*: Distribution and behaviour of large spirochaetes symbiotic in termites. **Microbios** 22:103-133.
- To, L. P. and L. Margulis. Ancient locomotion: Prokaryotic motility systems. **International Review of Cytology** 54:267-293.
- Watson, A., J. E. Lovelock and L. Margulis. Methanogenesis, fires and the regulation of atmospheric oxygen. **BioSystems** 10:293-298.
- Whittaker, R. H. and L. Margulis. Protist classification and the kingdoms of organisms. **BioSystems** 10:3-18.
1979. Berger, B., G. Thorington and L. Margulis. Two aeromonads: Growth of symbionts from *Hydra viridis*. **Current Microbiology** 3:5-10.
- Fracek, S. and L. Margulis. Colchicine, nocodazole and trifluralin: Different effects of microtubule polymerization inhibitors on the uptake and migration of endosymbiotic algae in *Hydra viridis*. **Cytobios** 25:7-15.
- Margulis, L., D. Chase and L. P. To. Possible evolutionary significance of spirochaetes. **Proceedings of the Royal Society of London**, Series B 204:189-198.
- Margulis, L., P. Mazur, E. S. Barghoorn, H. O. Halvorson, T. H. Jukes and I. R. Kaplan. The Viking mission: Implications for life on Mars. **Journal of Molecular Evolution** 14:223-232.
- Rambler, M. and L. Margulis. An ultraviolet light induced bacteriophage in *Beneckea gazogenes*. **Origins of Life** 9:235-240.
- Reimer, T. O., E. S. Barghoorn and L. Margulis. Primary productivity in an early Archean microbial ecosystem. **Precambrian Research** 9:93-104.
- Thorington, G., B. Berger and L. Margulis. Transmission of symbionts through the sexual cycle of *Hydra viridis*. I. Observations on living organisms. **Transactions of the American Microscopical Society** 98:401-413.
1980. Lowenstam, H. A. and L. Margulis. Evolutionary prerequisites for early Phanerozoic calcareous skeletons. **BioSystems** 12:27-41.
- Margulis, L. Undulipodia, flagella and cilia. **BioSystems** 12:105-108.
- Margulis, L., E. S. Barghoorn, D. Ashendorf, S. Banerjee, D. Chase, S. Francis, S. Giovannoni and J. Stolz. The microbial community in the layered sediments at Laguna Figueroa, Baja California, Mexico: Does it have Precambrian analogues? **Precambrian Research** 11:93-123.
- Rambler, M. B. and L. Margulis. Bacterial resistance to ultraviolet irradiation under anaerobiosis: Implications for pre-Phanerozoic evolution. **Science** 210:638-640.
- To, L. P., L. Margulis, D. Chase and W. L. Nutting. The symbiotic microbial community of the Sonoran desert termite: *Pterotermes occidentis*. **BioSystems** 13:109-137.
1981. Giovannoni, S. J. and L. Margulis. A red *Beneckea* from Laguna Figueroa, Baja California. **Microbios** 30:47-63.

- Giusto, J. P. and L. Margulis. Karyotypic fission theory and the evolution of old world monkeys and apes. **BioSystems** 13:267-302.
- Margulis, L., L. P. To and D. Chase. Microtubules, undulipodia and *Pillotina* spirochetes. **Annals of the New York Academy of Sciences** 361:356-368.
- Thorington, G. and L. Margulis. *Hydra viridis*: Transfer of metabolites between *Hydra* and symbiotic algae. **Biological Bulletin** 160:175-188.
1983. Margulis, L. Towards the origin of metazoan-style multicellularity. **Protistologica** 19:468.
- Margulis, L., B. D. D. Grosovsky, J. F. Stolz, E. J. Gong-Collins, S. Lenk, D. Read and A. López-Cortés. Distinctive microbial structures and the pre-Phanerozoic fossil record. **Precambrian Research** 20:443-477.
- Read, L. K., L. Margulis, J. Stolz, R. Obar and T. K. Sawyer. A new strain of *Paratetramitus jugosus* from Laguna Figueroa, Baja California, Mexico. **Biological Bulletin** 165:241-264.
- Sagan, D. and L. Margulis. The Gaian perspective of ecology. **Ecologist** 13:160-167.
1984. Margulis, L. and D. Sagan. Evolutionary origins of sex. **Oxford Surveys in Evolutionary Biology** 1:16-47.
- Margulis, L. and J. F. Stolz. Cell symbiosis theory: Status and implications for the fossil record. **Advances in Space Research** 4:195-201.
- Stolz, J. F. and L. Margulis. The stratified microbial community at Laguna Figueroa, Baja California, Mexico: A possible model for pre-Phanerozoic laminated microbial communities preserved in cherts. **Origins of Life** 14:671-679.
1985. Brown, S., L. Margulis, S. Ibarra and D. Siqueiros. Desiccation resistance and contamination as mechanisms of Gaia. **BioSystems** 17:337-360.
- Margulis, L. Evolución de la célula: La célula eucariótica como comunidad microbiana. **Arbor (Madrid)** 120: (472):13-38.
- Margulis, L. and D. Bermudes. Symbiosis as a mechanism of evolution: Status of cell symbiosis theory. **Symbiosis** 1:101-123.
- Margulis, L. and R. Obar. *Heliobacterium* and the origin of chrysoplasts. **BioSystems** 17:317-325.
- Margulis, L. and D. Sagan. Order amidst animalcules: The Protoctista kingdom and its undulipodiated cells. **BioSystems** 18:141-147.
1986. Fleischaker, G. R. and L. Margulis. Autopoiesis and the origin of bacteria. **Advances in Space Research** 6 (11):53-55.
- Guerrero, R., C. Pedrós-Alió, I. Esteve, J. Mas, D. Chase and L. Margulis. Predatory prokaryotes: Predation and primary consumption evolved in bacteria. **Proceedings of the National Academy of Sciences, USA** 83:2138-2142.
- Margulis, L., D. Chase and R. Guerrero. Microbial communities. **BioScience** 36:160-170.
- Margulis, L. and R. Guerrero. Not "origins of life" but "evolution in microbes". **Treballs de la Societat Catalana de Biologia** 39:105-112.
- Margulis, L., L. Lopez Baluja, S. M. Awramik and D. Sagan. Community living long before man: Fossil and living microbial mats and early life. **Science of the Total Environment** 56:379-397.
1987. Bermudes, D., S. P. Fracek, Jr., R. A. Laursen, L. Margulis, R. Obar and G. Tzertzinis. Tubulinlike protein from *Spirochaeta bajacaliforniensis*. **Annals of the New York Academy of Sciences** 503:515-527.
- Bermudes, D. and L. Margulis. Symbiont acquisition as neoseme: Origin of species and higher taxa. **Symbiosis** 4:185-197.
- Bermudes, D., L. Margulis and G. Tzertzinis. Prokaryotic origin of undulipodia: Application of the Panda Principle to the centriole enigma. **Annals of the New York Academy of Sciences** 503:187-197.
- Sagan, D. and L. Margulis. Bacterial bedfellows. **Natural History** 3:26-33. Reprinted in **Cooperation: Beyond the age of competition**. A. Combs, ed. Gordon and Breach, New York, 1992. Chapter 11.
- Stolz, J. F., L. Margulis and R. Guardans. La comunidad microbiana estratificada de la Laguna Figueroa, Baja California, México: Un posible modelo de comunidades laminadas y microfósiles prefanerozoicos preservados en pedernales. **Studia Geologica Salmanticensia** 24:7-24.
- Enzien, M. and L. Margulis. *Niebla ceruchis* from Laguna Figueroa: Dimorphic spore morphology and secondary compounds localized in pycnidia and apothecia. **Microbios** 55:75-83.
1988. Bermudes, D., D. Chase and L. Margulis. Morphology as a basis for taxonomy of large spirochetes symbiotic in wood-eating cockroaches and termites: *Pillotina* gen. nov., nom. rev.; *Pillotina calotermitidis* sp. nov., nom. rev.; *Diplocalyx* gen. nov., nom. rev.; *Diplocalyx calotermitidis* sp. nov., nom. rev.; *Hollandina* gen. nov., nom. rev.; *Hollandina pterotermitidis* sp. nov., nom. rev.; and *Clevelandina reticulitermitidis* gen. nov., sp. nov. **International Journal of Systematic Bacteriology** 38:291-302.
- Esteve, I., J. Mir, N. Gaju, H. I. McKhann and L. Margulis. Green endosymbiont of *Coleps* from Lake Cisó identified as *Chlorella vulgaris*. **Symbiosis** 6:197-210.



- Lazcano, A., R. Guerrero, L. Margulis and J. Oró. The evolutionary transition from RNA to DNA in early cells. **Journal of Molecular Evolution** 27:283-290.
- Margulis, L. Serial endosymbiotic theory (SET): Undulipodia, mitosis and their microtubule systems preceded mitochondria. **Endocytobiosis and Cell Research** 5:133-162.
- Margulis, L. and R. Guerrero. Nao "origens da vida" mas "evolucao em microbios". **O Ensino** 22-28:243-250.
- Margulis, L., G. Hinkle, H. McKhann, B. Moynihan and S. W. Brown. *Mychonastes desiccatus* Brown sp. nova (Chlorococcales, Chlorophyta) -- An intertidal alga forming achlorophyllous desiccation-resistant cysts. **Archiv für Hydrobiologie Supplement 78, Algological Studies** 49:425-446.
- Margulis, L., D. Sagan. Doña bacteria y sus dos maridos. **Ciencias** 2:12-16.
1989. Enzien, M., H. I. McKhann and L. Margulis. Ecology and life history of an amoebomastigote, *Paratetramitus jugosus*, from a microbial mat: New evidence for multiple fission. **Biological Bulletin** 177:110-129.
1990. Hinkle, G. and L. Margulis. Global ecology and the Gaia hypothesis. **Physiology and Ecology Japan** 27 (Special issue: "Ecology for Tomorrow"):53-62.
- Margulis, L. Kingdom Animalia: The zoological malaise from a microbial perspective. **American Zoologist** 30:861-875.
- Margulis, L. Words as battle cries -- Symbiogenesis and the new field of endocytobiology. **BioScience** 40:673-677.
- Margulis, L., M. Enzien and H. I. McKhann. Revival of Dobell's "chromidia" hypothesis: Chromatin bodies in the amoebomastigote *Paratetramitus jugosus*. **Biological Bulletin** 178:300-304.
- Margulis, L., G. Hinkle, J. Stolz, F. Craft, I. Esteve and R. Guerrero. *Mobilifilum chasei*: Morphology and ecology of a spirochete from an intertidal stratified microbial mat community. **Archives of Microbiology** 153:422-427.
- Margulis, L. and M. McMenamin. Kinetosome-centriolar DNA: Significance for endosymbiosis theory. **Treballs de la Societat Catalana de Biologia** 41:5-16.
- Margulis, L., L. Olendzenski and B. A. Afzelius. Endospore-forming filamentous bacteria symbiotic in termites: Ultrastructure and growth in culture of *Arthromitus*. **Symbiosis** 8:95-116. (*Arthromitus chasei* deposited with American Type Culture Collection No. 49589 **Symbiosis** 8:285).
1991. Barth, A. L., J. A. Stricker and L. Margulis. Search for eukaryotic motility proteins in spirochetes: Immunological detection of a tektin-like protein in *Spirochaeta halophila*. **BioSystems** 24:313-319.
- Margulis, L. and R. Guerrero. Kingdoms in turmoil. **New Scientist** 129 (1761):46-50.
- Margulis, L., L. Nault and J. M. Sieburth. *Cristispira* from oyster styles: Complex morphology of large symbiotic spirochetes. **Symbiosis** 11:1-17.
1992. Margulis, L. Biodiversity: Molecular biological domains, symbiosis and kingdom origins. **BioSystems** 27:39-51.
1993. Margulis, L. Centrioids and kinetosomes in animal multicellularity. **Invertebrate Reproduction and Development** 23:165-169 [Proceedings of the Sixth International Congress on Invertebrate Reproduction, Trinity College, Dublin, June 28-July 3, 1992].
- Margulis, L., J. B. Ashen and M. Solé and R. Guerrero. Composite, large spirochetes from microbial mats: Spirochete structure review. **Proceedings of the National Academy of Sciences** 90:6966-6970.
- Margulis, L. and O. West. Gaia and the Colonization of Mars. **GSA Today** 3:277-280.
- Guerrero, R., J. B. Ashen, M. Solé and L. Margulis. *Spirosymplokos deltaeiberi* nov. gen., nov. sp.: Variable-diameter composite spirochete from microbial mats. **Archives of Microbiology** 160:461-470.
- Margulis, L. Introduction -- From Gaia to microcosm. **BioSystems** 31:83.
- Margulis, L. Introduction to "Symbiointicism in the light of recent cytological investigations", by Ivan E. Wallin. **BioSystems** 31:181-183.
- Margulis, L. Origins of species: Inheritance of acquired genomes. **BioSystems** 31:121-125.
- Munson, D., R. Obar, G. Tzertzinis and L. Margulis. The "tubulin-like" S1 protein of *Spirochaeta* is a member of the HSP-65 stress protein family. **BioSystems** 31:161-167.
1994. Kirby, H., annotated by L. Margulis. Harold Kirby's symbionts of termites: Karyomastigont reproduction and calonymphid taxonomy. **Symbiosis** 16:7-63.
- Bermudes, D., G. Hinkle and L. Margulis. Do prokaryotic cells contain microtubules? **Microbiological Reviews** 58:387-400.
1995. Margulis, L. and R. Guerrero. Life as a planetary phenomenon: The colonization of Mars. **Microbiología SEM** 11 pp. 173-184.
- Duval, B. and L. Margulis. The microbial community of *Ophrydium versatile* colonies: Endosymbionts, residents and tenants. **Symbiosis** 18:181-210.
- Esteve, I., N. Mas-Castellà Gaju, R. Guerrero and L. Margulis. Bacterial survival mechanisms in microbial mats.

- Microbiología SEM** 11:397-399.
1996. Margulis, L., L. Olendzenski, M. Dolan and F. MacIntyre. Diversity of eukaryotic microorganisms: computer-based resources, *The Handbook of Protoctista and its Glossary*. **Microbiología SEM** 12:29-42.
- Margulis, L. Archaeal-eubacterial mergers in the origin of Eukarya: Phylogenetic classification of life. **Proceedings of the National Academy of Sciences** 93:1071-1076.
- Teal, T.H., M. J. Chapman, T. Guillemette and L. Margulis. Free-living spirochetes from Cape Cod microbial mats detected by electron microscopy. **Microbiología SEM** 12:571-584.
1997. Dolan, M. and L. Margulis. *Staurojoenina* and other symbionts in *Neotermes* from San Salvador Island, Bahamas. **Symbiosis** 22:229-239.
1998. Chapman, M. J. and L. Margulis. Morphogenesis by symbiogenesis. **International Microbiology** 1:319-326.
- Margulis, L., J. Z. Jorgensen, S. Dolan, R. Kolchinsky, F. A. Rainey and S-C. Lo. The *Arthromitus* stage of *Bacillus cereus*: Intestinal symbionts of animals. **Proceedings of the National Academy of Sciences** 95:1236-1241.
- Margulis, L and M. J. Chapman. Endosymbioses: Cyclical and permanent in evolution. **Trends in Microbiology** 6:342-346.
- Margulis, L., A. Navarrete and M. Solé. Cosmopolitan distribution of the large composite microbial mat spirochete, *Spirosymplokos deltaeiberi*. **International Microbiology** 1:27-34.
- Teal, T. H., T. Guillemette, M. J. Chapman and L. Margulis. *Acronema sippewissettensis* gen. nov. sp. nov., microbial mat bicosoecid (Bicosoecales=Bicosoecida) ATCC 50534. **European Journal of Protistology** 34:402-414.
1999. Margulis, L., M. Dolan and R. Guerrero. The molecular tangled bank: Not seeing the phylogenies for the trees. **Biological Bulletin** 196:413-414.
- d'Ambrosio, U., M. Dolan, A. M. Wier and L. Margulis. Devescovinid trichomonad with axostyle-based rotary motor ("Rubberneckia"): Taxonomic assignment as *Caduceia versatilis*, sp. nov. **European Journal of Protistology** 35:327-337.
- Guerrero, R., A. Haselton, M. Solé, A. M. Wier and L. Margulis. *Titanospirillum velox*: A huge, speedy, sulfur-storing spirillum from Ebro Delta microbial mats. **Proceedings of the National Academy of Sciences** 96:11584-11588.
- Feinberg, L., J. Jorgensen, A. Haselton, A. Pitt, R. Rudner and L. Margulis. *Arthromitus* (*Bacillus cereus*) symbionts in the cockroach *Blaberus giganteus*: Dietary influences on bacterial development and population density. **Symbiosis** 27:109-123.
2000. Dolan, M. F., U. D'Ambrosio, A. M. Wier and L. Margulis. Surface kinetosomes and disconnected nuclei of a calonymphid: Ultrastructure and evolutionary significance of *Snyderella tabogae*. **Acta Protozoologica** 39:135-141.
- Chapman, M. J., M. F. Dolan and L. Margulis. Centrioles and kinetosomes: Form, function and evolution. **The Quarterly Review of Biology** 75:409-429.
- Wier, A., J. Ashen and L. Margulis. *Canaleparolina darwiniensis*: gen. nov., sp. nov. and other pillotinae spirochetes from insects. **International Microbiology** 3:213-223.
- Margulis, L., M. F. Dolan and R. Guerrero. The chimeric eukaryote: Origin of the nucleus from the karyomastigont in amitochondriate protists. In *Colloquium on Variation and Evolution in Plants and Microorganisms: Towards a New Synthesis: 50 Years after Stebbins*. **Proceedings of the National Academy of Sciences** 97:6954-6959. Reprinted in 2000 **Variation and Evolution in Plants and Microorganisms: Towards a New Synthesis: 50 Years after Stebbins**. F. J. Ayala, W. M. Fitch and M. T. Clegg, eds. National Academy Press, Washington, DC. pp. 21-34
- Dolan, M. F., A. M. Wier and L. Margulis. Budding and asymmetric reproduction of a trichomonad with as many as 1000 nuclei in karyomastigonts: *Metacoronympha* from *Incisitermes*. **Acta Protozoologica** 39:275-280.
2002. Wier, A., M. F. Dolan, D. Grimaldi, R. Guerrero, J. Wagensberg, and L. Margulis. Spirochete and protist symbionts of a termite (*Mastotermes electrodominicus*) in Miocene amber. **Proceedings of the National Academy of Sciences** 99:1410-1413.
- Dolan, M., H. Melnitsky, L. Margulis and R. Kolnicki. Motility proteins and the origin of the nucleus. **Anatomical Record** 268:290-301.
- Benson, J. and L. Margulis. The *Gunnera manicata-Nostoc* symbiosis: Is the red stipulate tissue symbiogenetic? **Biology and Environment: Proceedings of the Royal Irish Academy** 102B:45-48.
- Margulis, L. The complex Individual, Symbiosis in Cell Evolution: Mitosis, microtubules and melanosome transfer in their evolutionary context. *PanAmerican Society for Pigment Cell Research* 11<sup>th</sup> Meeting. 16: 415.
2004. Wier, A. M., M. F. Dolan and L. Margulis. Cortical symbionts and hydrogenosomes of the amitochondriate protist *Staurojoenina assimilis*. **Symbiosis** 36:153-168.

- Melnitsky, H. and L. Margulis. Centrosomal Proteins in Termite Symbionts: Gamma-tubulin and scleroderma antibodies bind rotation zone of *Caduceia versatilis*. **Symbiosis** 37:323-333.
- Dolan, M. F., A. M. Wier, H. Melnitsky, J. Whiteside and L. Margulis. Cysts and symbionts of *Staurojoenina assimilis* Kirby from *Neotermes* **European Journal of Protistology** 40:257-264.
2005. Margulis, L., M. Dolan and J. Whiteside. "Imperfections and oddities" In The origin of the nucleus. E. Verba and N. Eldredge, eds. (Special issue in memory of Stephen J. Gould: Macroevolution: Diversity and disparity). **Paleobiology** 31: 175-191.
2006. Margulis, L., M. Chapman, R. Guerrero, and J. Hall. The Last Eukaryotic Common Ancestor (LECA): Acquisition of cytoskeletal motility from aerotolerant spirochetes in the Proterozoic eon. **Proceedings of the National Academy of Sciences** 103:13080-13085.
2007. Wier, A., J. MacAllister and L. Margulis. Hibernacular behavior of spirochetes inside membrane-bounded vesicles of the termite protist *Staurojoenina assimilis*. **Symbiosis**. 44:75-83.
- Margulis, L., Chapman M. J. and M. F. Dolan. Position paper. Eukaryosis: Phagocytosis and hydrogenases. **Symbiosis** 43: 161-166.
- Margulis, L. and M. McFall-Ngai. Our discipline comes of age. Foreword. In **Symbiosis**. 44: ii-iv.
- Margulis, L., M. Chapman, and M. F. Dolan. Semes for analysis of evolution: de Duve's peroxisomes and Meyer's hydrogenases in the sulfurous Proterozoic eon. **Symbiosis** 43: 164-166. Reprinted from **Nature Reviews-Genetics** Online [www.nature.com/nrg/index.html](http://www.nature.com/nrg/index.html).
2009. Margulis, L., A. Maniotis, J. MacAllister, J. Scythes, O. Brorson, J. Hall, W. E. Krumbein, and M. J. Chapman. Position paper. Spirochete round bodies, Syphilis, Lyme disease & AIDS: Resurgence of "the great imitator"? **Symbiosis** 47: 51-58.
- Margulis, L. Pavements along memory lane and castles of sand long before "Man". Introduction in Special Issue: Microbial mats in Earth's fossil record of life: Geobiology. N. Noffke, ed. **Earth Science Reviews** 96: v-vi.
- Brorson, Ø, S. H. Brorson, J. Scythese, J. MacAllister, A. Wier and L. Margulis. Destruction of spirochete *Borrelia burgdorferi* round-body propagules (RBs) by the antibiotic Tigecycline. **Proceedings of the National Academy of Sciences** 106: 18656-18661.
2010. Wier, A. M., S. Luciano, M. F. Dolan, C. Bandi, J. MacAllister and L. Margulis. Spirochete attachment ultrastructure: Implications for the origin and evolution of cilia. **Biological Bulletin** 218: 23-35.
2011. Margulis, L. and C. Bandi. Evoluzione. Evoluzione: La simbiogenesi, non le mutazioni casuali nel DNA, come fonte di caratteri ereditabili degli organismi. **Centro Interuniversitario di Biologia Marina**, Livorno.

Articles in preparation or press

- Margulis, L. Heinz Lowenstam: Father of Biomineralization. (ed., Robert Ginsburg).
- Margulis, L. The rediscovery of B. M. Kozo-Polyansky: Symbiogenesis, a new principle of evolution. E. Kolchinsky ed. **Russian Academy of Sciences, History of Genetics and Evolution**, St. Petersburg, Russia.

BOOKS:

1970. Margulis, L. *Origin of Eukaryotic Cells: Evidence and research implications for a theory of the origin and evolution of microbial, plant and animal cells on the Precambrian Earth*. Yale University Press, New Haven, CT, xxii + 349 pp.
- Margulis, L., ed. **Origins of Life: Proceedings of the first conference**. [Proceedings of the 1st Interdisciplinary Communications Program Conference on the Origins of Life, May 21-24, 1967, Princeton, NJ]. Gordon and Breach, New York, NY, xiii + 376 pp.
1971. Margulis, L., ed. *Proceedings of the Second Conference on Origins of Life: Cosmic evolution, abundance and distribution of biologically important elements*. [May 5-8, 1968, Princeton, NJ] Interdisciplinary Communication Associates, Washington, DC. vii + 238 pp.
1973. Margulis, L., ed. **Proceedings of the Fourth Conference on Origins of Life: Chemistry and radioastronomy**. [Apr. 13-16, 1971, Elkridge, MD]. Springer-Verlag, New York, NY, xvi + 291 pp.
- Margulis, L., ed. **Proceedings of the Third Conference on Origins of Life: Planetary astronomy**. [Feb. 27-Mar. 1, 1970, Pacific Palisades, CA]. Springer-Verlag, New York, NY, xi + 268 pp.
1980. Ponnamperuma, C. and L. Margulis, eds. **Limits of Life**. [Proceedings of the Fourth College Park Colloquium on Chemical Evolution, Oct. 18-20, 1978, College Park, MD]. Reidel, Dordrecht, The Netherlands, xii + 199 pp.
1981. Margulis, L. **Symbiosis in Cell Evolution: Life and its environment on the early earth**. W. H. Freeman, San Francisco, CA, xxii + 419 pp.

- Translations: Russian, MIR Publishers, Moscow, Russia, 1983; Japanese: Tokyo, Japan, 1985.
1982. Margulis, L. **Early life**. Science Books International, Boston, xiv + 160 pp. Reprinted, Jones and Bartlett, Boston, MA.  
Translations: Spanish, Origen de la célula. Editorial Reverté, Barcelona, Spain, 1986.
- Margulis, L. and K. V. Schwartz. **Five kingdoms: An illustrated guide to the phyla of life on Earth**. W. H. Freeman, New York, NY, xiv + 338 pp.  
Translations: Spanish, Editorial Labor, Barcelona, Spain, 1985; German, Spektrum der Wissenschaft, Heidelberg, Germany, 1989; Japanese, Nikkei Science, Tokyo, Japan, 1987.
1983. Margulis, L. and D. Sagan. **Nascita ed Evoluzione della vita**. Gruppo Editoriale Fabbri, Milan, 63 pp.
1986. Margulis, L. and D. Sagan. **Microcosmos: Four billion years of evolution from our microbial ancestors**. Summit Books, New York, NY, ix + 301 pp.  
Translations: Microcosmos, British, Allen & Unwin, London, United Kingdom, 1986; L'univers bacterial, French, Albin Michel, Paris, France, 1989; Microcosmo, Italian, Arnoldo Mondadori, Rome, Italy, 1989; Japanese, Tokyo Kagaku Dojin, Tokyo, Japan, 1989; Microcosmos, Portuguese, Edicoes, Lisbon, Portugal, 1990; Mikrokosmos, Danish, Nysyn, Munksgaard, Denmark, 1990; Microcosmos, Spanish, Metatemas Tusquets Editors, Libros para pensar la ciencia, Barcelona, Spain, 1995; Chinese, Commonwealth Publishing Co. Ltd. China, 1995; Hebrew, Magnes Press, The Hebrew University, 1999; L'univers bacterial, French Paperback, Albin Michel, Paris, France 2002; Microcosmos, Portuguese Paperback, Editora Pensamento-Cultrix LTDA, São Paulo, Brazil, 2004; Mikrokosmosa, Basque, Gaiak Argitaldaria, San Bartolome, Donastia, 2007; Korean, Gimmyoung Publishers, Korea 2011.  
Paperback: University of California Press, Berkeley, CA, 1997 and 2002.
- Margulis, L. and D. Sagan. **Origins of Sex: Three billion years of genetic recombination**. Yale University Press, New Haven, CT, xiii + 258 pp.  
Translation: Japanese, 1995.
- Sagan, D., H. McKhann, M. Dolan and L. Margulis. **The Internship Experience: NASA Planetary Biology Internship program 1980-1986**. NASA Life Sciences, Washington, DC. viii + 170 pp.
- Margulis, L., R. Guerrero and A. Lazcano, eds. **Origen de la Vida i Evolució de la Cèl·lula** (Origin of Life and Evolution of Cells). [Treballs de la Societat Catalana de Biologia, v. 39]. Societat Catalana de Biologia, Barcelona, Spain, 146 pp.
1988. Margulis, L. and D. Sagan. **The Microcosmos Coloring Book**. Harcourt Brace Jovanovich, Boston, MA, 232 pp.
- Margulis, L. and K. V. Schwartz. **Five Kingdoms: An illustrated guide to the phyla of life on Earth** 2<sup>nd</sup> edition. W. H. Freeman, New York, NY, xvi + 376 pp.
- Sagan, D. and L. Margulis. **Garden of Microbial Delights: A practical guide to the subvisible world**. Harcourt Brace Jovanovich, Boston, MA, viii + 231 pp.
1989. Rambler, M. B., L. Margulis and R. Fester, eds. **Global Ecology: Towards a science of the biosphere**. Academic Press, Boston, MA, xii + 204 pp.
- Sagan, D. and L. Margulis. **Biospheres: From Earth to Space**. Enslow, Hillside, NJ, 96 pp.
1990. Margulis, L., J. O. Corliss, M. Melkonian and D. J. Chapman, eds. **Handbook of Protoctista: The structure, cultivation, habitats and life histories of the eukaryotic microorganisms and their descendants exclusive of animals, plants and fungi**. Jones and Bartlett, Boston, MA, xli + 914 pp.
- Nardon, P., V. Gianinazzi-Pearson, A. M. Grenier, L. Margulis and D. C. Smith, eds. **Endocytobiology IV**. Proceedings of the 4th International Colloquium on Endocytobiology and Symbiosis, July 4-8, 1989, Villeurbanne, France. Institut National de la Recherche Agronomique, Paris, France, 620 pp.
1991. Margulis, L. and R. Fester, eds. **Symbiosis as a Source of Evolutionary Innovation: Speciation and morphogenesis**. MIT Press, Cambridge, MA, xiii + 454 pp.
- Margulis, L. and D. Sagan. **Mystery Dance: On the evolution of human sexuality**. Summit Books, New York, NY, 224 pp.  
Translations: Spanish, Kairós, Barcelona, Spain, 1993; Italian, Arnoldo Mondadori Editore, Milano, Italy, 1992; Danish, Munksgaard, Nysyn, Denmark, 1992; Dutch, Uitgeverij Contact, Amsterdam, The Netherlands, 1992; German, Biblioverlag, Berlin, Germany, 1996; Greek, NIKKAN, Greece, 1994; Japanese, Tokyo, Japan, 1993.
1992. Dolan, M., L. Olendzenski, L. Margulis, D. Sagan and S. Hiebert, eds. **The Internship Experience: NASA planetary biology internship program 1986-1992**. NASA Life Sciences, Washington, DC. iv + 143 pp.
- Khakhina, L. N. **Concepts of Symbiogenesis: A historical and critical study of the research of Russian botanists**. M. McMenamin and L. Margulis, eds. Yale University Press, New Haven, CT, xxix + 177 pp.
- Margulis, L. **Diversity of Life: The five kingdoms**. Enslow, Hillside, NJ, 80 pp.

- Margulis, L. and L. Olendzenski, eds. *Environmental Evolution: The effect of the origin and evolution of life on planet Earth*. MIT Press, Cambridge, MA, xviii + 405 pp.  
Translations: Spanish, Mónica Solé Rojo: *Evolución ambiental: Efectos del origen y evolución de la vida sobre el planeta Tierra*. Alianza Editorial, S.A., Madrid, Spain, 1996.
1993. Margulis, L. **Symbiosis in Cell Evolution: Microbial communities in the Archean and Proterozoic eons**. 2<sup>nd</sup> edition. W. H. Freeman, New York, NY, xxvii + 452 pp.
- Margulis, L., H. I. McKhann and L. Olendzenski, eds. **Illustrated Glossary of the Protoctista**. Jones and Bartlett, Boston, MA, iv + 288 pp.
- Sagan, D. and L. Margulis. **Garden of Microbial Delights: A practical guide to the subvisible world**. Kendall-Hunt Publishers, Dubuque, IA, vii + 232 pp.
- Margulis, L. **BioSystems: From Gaia to microcosm**. Elsevier Scientific Publishers Ireland Ltd. 248 pp.
1994. Margulis, L., K. V. Schwartz and M. Dolan. **The Illustrated Five Kingdoms: A guide to the diversity of life on Earth**. HarperCollins College Publishers, New York, NY, ix + 229 pp.
1995. Margulis, L. and D. Sagan. **What is Life?** A Peter N. Nevraumont Book. Simon & Schuster, New York; Weidenfeld and Nicolson, London, United Kingdom, 207 pp.  
Translation: Spanish, ¿Qué es la Vida? Tusquets Editores, Barcelona, 1996 and 2005; Japanese, Selica Shobo. Bureau des Copyrights Français, Tokyo, Japan, 1998; Chinese, Wa shi shui? Zhou Hanyan, trans. Jiangxi Education Press. Nanchang, Jiangxi Province, 2001.  
Paperback: University of California Press, Berkeley, CA, 2000.
1997. Dolan, M., L. Brynes, L. Margulis, J. Miller and D. Sagan. **The Internship Experience 1992-1996 Planetary Biology Internship**. NASA Space Sciences, Exobiology, Office of Space Science, Washington, DC. 158 pp.
- Margulis, L. and D. Sagan. **Slanted Truths: Essays on Gaia, symbiosis and evolution**. Copernicus/Springer Verlag, New York, NY, xxiii + 368 pp.  
Translations: Chinese, Jiangxi Education Press, Nanchang, Jiangxi Province, China, 1998.
- Margulis, L. and D. Sagan. **What is Sex?** A Peter N. Nevraumont Book. Simon & Schuster, New York. 256 pp.  
Translation: Spanish, ¿Qué es el sexe? Tusquets Editores, S.A., Barcelona, Spain, 1998; Catalan, Proa la mirada, Enciclopedia Catalana, Barcelona, Spain, 1999; Japanese, Le Bureau des Copyrights Francais, Tokyo, Japan, 1998; Chinese, Wo de ling yi ban? Wang Yue-rui and Zhou Hanyan, trans. Jiangxi Education Press. Nanchang, Jiangxi Province, China.
1998. Margulis, L. and K. V. Schwartz. **Five Kingdoms: An illustrated guide to the phyla of life on Earth**. 3rd edition. W.H. Freeman, New York, NY, xx + 520 pp.  
Translations: Portuguese, Cinco Reinos: Um guia ilustrado dos filos da vida na terra. Editoria Guanabara Koogan S.A., Rio de Janeiro, Brazil, 2004; Spanish, (in production) Tusquets Editores, S.A., Barcelona, Spain 2004.
- Margulis, L. **Symbiotic Planet: A new look at evolution**. Basic Books, New York, NY, vi + 147 pp.  
Translations: Chinese, Brockman, Inc., 1998; Dutch, De Symbiotische Planeet. Een nieuwe kijk op de evolutie. Uitgeverij Contact, Amsterdam/Antwerpen, The Netherlands, 1999; German, Die andere Evolution. Spektrum Akademischer Verlag, Heidelberg/Berlin, Germany, 1999; Japanese, Soshisa, Tokyo, Japan, 2000; Spanish, Planeta simbiótico. Random House Mondadori, Barcelona, Spain, 2002; Korean, Science Books Co., Ltd. Seoul, Korea 2007.  
Paperback: Phoenix, Orion Books, Ltd., London, United Kingdom, 1999.
1999. Margulis, L., K. V. Schwartz and M. Dolan. **Diversity of Life: An illustrated guide to the five kingdoms**, 2<sup>nd</sup> edition. Jones and Bartlett, Sudbury, MA, vii + 248 pp.
2000. Margulis, L., C. Matthews and A. Haselton, eds. **Environmental Evolution: Effects of the origin and evolution of life on planet Earth**. 2<sup>nd</sup> edition. MIT Press, Cambridge, MA, xvi + 338 pp.
2002. Margulis, L. and M. Dolan. **Early Life: Evolution on the Precambrian Earth**, 2<sup>nd</sup> edition. Jones and Bartlett, Sudbury, MA. vii + 168 pp.  
Translations: Catalan, Els inicis de la vida. Publicacions de la Universitat de València/Edicions Bromera Valencia, Spain, 2007; Spanish, Los inicios de la vida, Sin Fronteras, Publicacions de la Universitat de València/Càtedra de Divulgació de la Ciència, Valencia, Spain, 2009.
- Margulis, L. and D. Sagan. **Acquiring Genomes: A theory of the origins of species**. Basic Books, NY, xvi + 240 pp.  
Translations: Spanish, Captando Genomas: Una teoría sobre el origen de las especies. Editorial Kariós S.A, Barcelona, Spain, 2003.  
Paperback: Basic Books, New York, NY, 2003.

- Margulis, L. **Peces Luminosos: Historias de ciencia y amor**. Coleccion Metatemas. Tusquets, Barcelona, Spain. 208 pp.
- Margulis, L. **Una Revolución en la Evolución**. Colección Honoris Causa, Universitat de València, Valencia, Spain. 376 pp.
2006. McHarg, I. **Ian McHarg: Conversations with students: Dwelling in nature**. L. Margulis, J. Corner, and B. Hawthorne, eds. Princeton Architectural Press, Princeton NJ. iv + 112 pp.
2007. Margulis, L. **Luminous Fish: Tales of science and love**. Chelsea Green Publishing, VT. 180 pp.
- Margulis, L. and D. Sagan. **Dazzle Gradually: Reflections on the nature of nature**. Foreword by R. Hoffmann. (formerly, “Slanted Truths”). Chelsea Green Publishing, VT. 259 pp.
- Margulis, L. and E. Punset, eds. **Mind, Life and Universe: Conversations with great scientists of our time**. Foreword by D. Suzuki (translation). Chelsea Green Publishing, VT. 304 pp.
- Paperback: Chelsea Green Publishing, VT, 2007.
2010. Kozo-Polyansky, B. M [1924]. **Symbiogenesis: A new principle of evolution by Boris Mikhaylovich Kozo-Polyansky**. V. Fet and L. Margulis eds., tr. V. Fet. Introduction by P. Raven. Harvard University Press, Cambridge, MA. 240 pp.
- Margulis, L. and M. J. Chapman **Kingdoms & Domains: Illustrated phyla of life on Earth**. 4th edition, second printing, of L. Margulis and K. V. Schwartz ‘s **Five Kingdoms: An illustrated guide to the phyla of life on Earth**. W.H. Freeman, Inc. 1982, 1988, 1998. Elsevier, San Diego/London. Academic Press, 659 pp.
2011. Margulis, L., C. A. Asikainen and W. E. Krumbein eds. **Chimeras and Consciousness: Evolution of the sensory self**. Bellagio Conference. MIT Press, Cambridge, MA. v-321 pp.
- Translation: Spanish, Consorcio de Universidades Mexicanas, Guadalajara, Mexico (in prep).

Books in preparation or press

- Margulis, L. **Symbiogenetics: Origins of mitotic cells from bacterial communities in the Proterozoic Eon**, 4th edition of Symbiosis in Cell Evolution. W. H. Freeman Co, NY.
- Margulis, L. and M. Chapman, ed. 2<sup>nd</sup> edition. **Handbook of Protoctista: The structure, cultivation, habitats and life histories of the eukaryotic microorganisms and their descendants exclusive of animals, plants and fungi**. Jones and Bartlett, Sudbury, MA.
- Brynes L. and L. Margulis. **Trail through time**. (formerly, “Walk through time”) Geological Society of America books.

CHAPTERS AND FOREWORDS:

1971. Margulis, L. Microbial evolution on the early Earth. In **Molecular Evolution 1: Chemical evolution and the origin of life**. R. Buvel and C. Ponnampuruma, eds. North-Holland, Amsterdam, The Netherlands, pp. 480-484.
1972. Margulis, L. Early cellular evolution. In **Exobiology**. C. Ponnampuruma, ed. Amsterdam, The Netherlands, pp. 342-368.
1974. Margulis, L. The classification and evolution of prokaryotes and eukaryotes. In **Handbook of Genetics**, vol. 1: **Bacteria, bacteriophages and fungi**. King, R. C., ed. Plenum, New York, NY, pp. 1-41.
- Margulis, L. Five-kingdom classification and the origin and evolution of cells. In **Evolutionary Biology**, vol. 7. T. Dobzhansky, M. K. Hecht and W. C. Steere, eds. Plenum, New York, NY, pp. 45-78.
1975. Margulis, L. Microtubules and evolution. In **Microtubules and Microtubule Inhibitors**. M. Borgers and M. de Brabander, eds. Amsterdam, The Netherlands, pp. 3-18.
- Margulis, L. Symbiotic theory of the origin of eukaryotic organelles: Criteria for proof. In **Symbiosis**. [Symposia of the Society for Experimental Biology, No. 29]. D. H. Jennings and D. L. Lee, eds. Cambridge University Press, Cambridge, MA, pp. 21-38.
- Margulis, L., S. Banerjee and J. K. Kelleher. Assay for antitubulin drugs in live cells: Oral regeneration in *Stentor coeruleus*. In **Microtubules and Microtubule Inhibitors**. M. Borgers and M. de Brabander, eds. Amsterdam, The Netherlands, pp. 453-470.
1976. Awramik, S. M., L. Margulis and E. S. Barghoorn. Evolutionary processes in the formation of stromatolites. In **Stromatolites**. [Developments in Sedimentology, 20]. M. R. Walter, ed. Elsevier, Amsterdam, The Netherlands, pp. 149-162.
- Margulis, L. De rol van microben in het evolutieproces. In **De Microbiologie Drie Eeuwen na Antoni van Leeuwenhoek**. F. Wensinck, ed. Pudoc, Centrum voor Landbouwpublikaties en Landbouwdocumentatie, Wageningen, The Netherlands, pp. 72-96.
1977. Francis, S., L. Margulis, W. Caldwell and E. S. Barghoorn. Comparison of laboratory silicified blue-green algae with Precambrian microorganisms. In **Chemical Evolution of the Early Precambrian**. C. Ponnampuruma, ed. Academic Press, New York, NY, pp. 181-183.

- Margulis, L. Evolution of mitosis and the late appearance of metazoa, metaphyta and fungi. In **Chemical Evolution of the Early Precambrian**. C. Ponnampertuma, ed. Academic Press, New York, NY, pp. 187-189.
- Rambler, M., L. Margulis and E. S. Barghoorn. Natural mechanisms of protection of a blue-green alga against ultraviolet light. In **Chemical Evolution of the Early Precambrian**. C. Ponnampertuma, ed. Academic Press, New York, NY, pp. 133-141.
1978. Margulis, L. and J. E. Lovelock. The biota as ancient and modern modulator of the Earth's atmosphere. In **Influence of the Biosphere on the Atmosphere**. [Contributions to Current Research in Geophysics, vol. 5]. H. U. Dütsch, ed. Birkhäuser Verlag, Basel, Germany, pp. 239-243. (Reprinted from *Pageoph*, 1978.)
1979. Margulis, L., D. Chase and L. P. To. Possible evolutionary significance of spirochaetes. In **The Cell as a Habitat**. The Royal Society, London, United Kingdom, pp. 75-84. (Reprinted from **Proceedings of the Royal Society of London, Series B**, 1979).
1980. Lowenstam, H. A. and L. Margulis. Calcium regulation and the appearance of calcareous skeletons in the fossil record. In **The Mechanisms of Biomineralization in Animals and Plants: Proceedings of the third international biomineralization symposium**. M. Omori and N. Watabe, eds. Tokai University Press, Tokyo, Japan, pp. 289-300.
- Margulis, L. Phyla for bacteria. In **The Origins of Life and Evolution**. H. O. Halvorson and K. E. van Holde, eds. Alan R. Liss, New York, NY, pp. 87-95.
- Margulis, L. Symbiosis as parasexuality. In **Cellular Interactions in Symbiosis and Parasitism**. C. B. Cook, P. W. Pappas and E. D. Rudolph, eds. Ohio State University Press, Columbus, OH, pp. 263-273.
- Thorington, G. and L. Margulis. Transmission of the algal and bacterial symbionts of green hydra through the host sexual cycle. In **Endocytobiology: Endosymbiosis and cell biology, a synthesis of recent research**. W. Schwemmler and H. E. A. Schenk, eds. De Gruyter, Berlin, Germany, pp. 175-222.
1981. Margulis, L. and J. E. Lovelock. Atmospheres and evolution. In **Life in the Universe**. J. Billingham, ed. MIT Press, Cambridge, MA, pp. 79-100.
- Margulis, L., L. P. To and D. G. Chase. The genera *Pillotina*, *Hollandina* and *Diplocalyx*. In **The Prokaryotes: A handbook on habitats, isolation and identification of bacteria**. M. P. Starr, H. Stolp, H. G. Trüper, A. Balows and H. G. Schlegel, eds. Springer-Verlag, Berlin, Germany, pp. 548-554.
1982. Brock, T. D., P. J. Cook, H. P. Eugster, A. M. Goodwin, H. L. James, L. Margulis, K. H. Nealson, J. O. Nriagu, A. F. Trendall and M. R. Walter. Sedimentary iron deposits, evaporites and phosphorites: State of the art report. In **Mineral Deposits and the Evolution of the Biosphere**. H. D. Holland and M. Schidlowski, eds. Springer-Verlag, Berlin, Germany, pp. 259-273.
- Grosovsky, B. D. D. and L. Margulis. Termite microbial communities. In **Experimental Microbial Ecology**. R. G. Burns and J. H. Slater, eds. Blackwell Scientific Publications, Oxford, United Kingdom, pp. 519-532.
- Margulis, L. The biological point of view: The effect of life on the planet. In **Formation of Planetary Systems**. A. Brahic, ed. Cepadues, Toulouse, France, pp. 891-893.
- Margulis, L. Chemistry and evolution: Kingdoms and phyla. In **Biochemical Aspects of Evolutionary Biology**. M. H. Nitecki, ed. University of Chicago Press, Chicago, IL, pp. 9-27.
- Margulis, L. Microtubules in microorganisms and the origins of sex. In **Microtubules in Microorganisms**. P. Cappucinelli and N. R. Morris, eds. Marcel Dekker, New York, NY, pp. 341-349.
1983. Margulis, L. and J. Stolz. Microbial systematics and a Gaian view of the sediments. In **Biomineralization and Biological Metal Accumulation: Biological and geological perspectives**. P. Westbroek and E. W. de Jong, eds. Reidel, Dordrecht, The Netherlands, pp. 27-53.
1984. Margulis, L. Foreword. In **Genesis on Planet Earth: The search for life's beginning**, 2<sup>nd</sup> edition. W. Day. Yale University Press, New Haven, CT, pp. xv-xvi.
- Margulis, L. Origen de la célula eucariótica. In **Darwin a Barcelona**. G. de Puytorac and J. Grain, eds. Promociones Publicaciones Universitarias, Barcelona, Spain, pp. 173-186
- Sagan, D. and L. Margulis. Gaia and philosophy. In **On Nature**. L. S. Rouner, ed. University of Notre Dame Press, Notre Dame, IN, pp. 60-75.
1985. Margulis, L. and D. Sagan. The real deficit: Our debt to the biosphere. In **The Biosphere Catalogue**. T. P. Snyder, ed. Synergetic Press, London, United Kingdom, pp. 1-3.
- Margulis, L., D. Sagan and L. Olendzenski. 1985. What is sex? In **The Origin and Evolution of Sex**. H. O. Halvorson and A. Monroy, eds. Alan R. Liss, New York, NY, pp. 69-85.
1986. Margulis, L. Foreword. In **Symbiosis: An introduction to biological associations**. V. Ahmadjian and S. Paracer. University Press of New United Kingdom, Hanover, NH, pp. ix-x.

1987. Margulis, L. Early life: The microbes have priority. In **Gaia: A way of knowing: Political implications of the new biology**. W. I. Thompson, ed. Lindisfarne Press, Great Barrington, MA, pp. 98-109.
- Margulis, L. Foreword. In **The Universe and Life: Origins and evolution**. G. S. Kutter. Jones and Bartlett, Boston, MA, pp. vii-ix.
1988. Margulis, L. The ancient microcosm of planet Earth. In **origins and extinctions**. D. E. Osterbrock and P. H. Raven, eds. Yale University Press, New Haven, CT, pp. 83-107. (Paperback, Yale University Press, New Haven, 1992).
- Margulis, L. Intimate evolution of a nature lover. In **Gifted Young in Science: Potential through performance**. P.F. Brandwein and A.H. Passow, eds. National Science Teachers Association, Washington, DC. pp. 367-369.
- Margulis, L. Jim Lovelock's Gaia. In **Gaia, the Thesis, the Mechanisms and the Implications**. P. Bunyard and E. Goldsmith, eds. Wadebridge Ecological Centre, Cornwall, United Kingdom, pp. 50-65.
- Margulis, L. Speculation on speculation. In **The Reality Club 1**. J. Brockman, ed. Lynx Books, New York, NY, pp. 39-50.
- Margulis, L. Systematics: The view from the origin and early evolution of life. Secession of the Protoctista from the animal and plant kingdoms. In **Prospects in Systematics**. D. L. Hawksworth, ed. Clarendon Press, Oxford, United Kingdom, pp. 430-443.
- Margulis, L. and D. Bermudes. Symbiosis and evolution: A brief guide to recent literature. In **Cell-to-Cell Signals in Plant, Animal and Microbial Symbiosis**. S. Scannerini, D. C. Smith, P. Bonfante-Fasolo and V. Gianinazzi-Pearson, eds. Springer-Verlag, Berlin, Germany, pp. 159-165.
- Margulis, L. and D. Sagan. Sex: The cannibalistic legacy of primordial androgynes. In **The Evolution of Sex**. R. Bellig and G. Stevens, eds. [Nobel Conference XXIII]. Harper & Row, San Francisco, CA, pp. 23-40.
- Sagan, D. and L. Margulis. Gaia and biospheres. In **Gaia, the Thesis, the Mechanisms and the Implications**. P. Bunyard and E. Goldsmith, eds. Wadebridge Ecological Centre, Cornwall, United Kingdom, pp. 237-242.
1989. Margulis, L. and R. Guerrero. From planetary atmospheres to microbial communities: A stroll through space and time. In **Changing the Global Environment: Perspectives on human involvement**. D. B. Botkin, M. F. Caswell, J. E. Estes and A. A. Orio, eds. Academic Press, Boston, MA, pp. 51-67.
- Margulis, L. and J. E. Lovelock. Gaia and geognosy. In **Global Ecology: Towards a science of the biosphere**. M.B. Rambler, L. Margulis and R. Fester, eds. Academic Press, Boston, MA, pp. 1-30.
1990. Margulis, L. Big trouble in biology: Physiological autopoiesis versus mechanistic neo-Darwinism. In **Doing Science: The reality club 2**. J. Brockman, ed. Prentice Hall, New York, NY, pp. 211-235.
- Margulis, L. Des procaryotes aux protistes eucaryotes. In **Journée Édouard Chatton**. Muséum d'Histoire Naturelle, Perpignan, France, pp. 13-16.
- Margulis, L. Speculation on speculation. In **Speculations: The reality club**. J. Brockman, ed. Prentice Hall, New York, pp. 157-167.
- Margulis, L. and R. Guerrero. From origins of life to evolution of microbial communities: A minimalist approach. In **Prebiological Self Organization of Matter**. C. Ponnampuruma and F. R. Eirich, eds. A. Deepak, Hampton, VA, pp. 261-278.
- Margulis, L., G. Hinkle and G. Tzertzinis. Symbiosis in the origin of eukaryotic cell motility: Current status. In **Endocytobiology IV**. P. Nardon, V. Gianinazzi-Pearson, A. M. Grenier, L. Margulis and D. C. Smith, eds. Institut National de la Recherche Agronomique, Paris, France, pp. 523-525.
1991. Margulis, L. Come nasce la vita. In **La Narrazione delle Origini: A cura di lorena preta**. Gius. Laterza & Figli, Roma-Bari, Italy, pp. 30-36.
- Margulis, L. Gaia, a new look at the Earth's systems. In **Technology, Development and the Global Environment**. W. J. Makofske, H. Horowitz, E. F. Karlin and P. McConnell, eds. Institute for Environmental Studies, School of Theoretical and Applied Science, Ramapo College, Mahwah, NJ, pp. 299-305.
- Margulis, L. Symbiogenesis and symbiogenesis. In **Symbiosis as a Source of Evolutionary Innovation: Speciation and morphogenesis**. L. Margulis and R. Fester, eds. MIT Press, Cambridge, MA, pp. 1-14.
- Margulis, L. Symbiosis in evolution: Origins of cell motility. In **Evolution of Life: Fossils, molecules and culture**. S. Osawa and T. Honjo, eds. Springer-Verlag, Tokyo, Japan, pp. 305-324.
- Margulis, L. and R. Guerrero. Two plus three equal one: Individuals emerge from bacterial communities. In **Gaia 2. Emergence: The new science of becoming**. W. I. Thompson, ed. Lindisfarne Press, Hudson, NY, pp. 50-67.
- Margulis, L. and G. Hinkle. The biota and Gaia: 150 years of support for environmental sciences. In **Scientists on Gaia**. S. H. Schneider and P. J. Boston, eds. MIT Press, Cambridge, MA, pp. 11-18.
- Margulis, L. and D. Sagan. Microcosmos. In **From Gaia to Selfish Genes: Selected writings in the life sciences**. C. Barlow, ed. MIT Press, Cambridge, MA, pp. 57-66.



- Sagan, D. and L. Margulis. Epilogue: The uncut self. In **Organism and the origins of self**. [Boston Studies in the Philosophy of Science, vol. 129]. A. I. Tauber, ed. Kluwer Academic, Dordrecht, The Netherlands, pp. 361-374.
1992. Margulis, L. Spirochetes and the origin of undulipodia. In **Environmental Evolution: The effect of the origin and evolution of life on planet Earth**. L. Margulis and L. Olendzenski, eds. MIT Press, Cambridge, MA, pp. 177-203.
- Margulis, L. Symbiosis theory: Cells as microbial communities. In **Environmental Evolution: The effect of the origin and evolution of life on planet Earth**. L. Margulis and L. Olendzenski, eds. MIT Press, Cambridge, MA, pp. 151-174.
- Margulis, L. and G. Hinkle. Large symbiotic spirochetes: *Clevelandina*, *Cristispira*, *Diplocalyx*, *Hollandina* and *Pillotina*. In **The Prokaryotes: A Handbook on the Biology of Bacteria: Ecophysiology, isolation, identification, applications**, 2<sup>nd</sup> edition, vol. 4. A. Balows, H. G. Trüper, M. Dworkin, W. Harder and K.-H. Schleifer, eds. Springer-Verlag, New York, NY, pp. 3965-3978.
- Margulis, L. and A. I. Tauber. Foreword. In **Larvae and evolution: Toward a new zoology**. D. I. Williamson. Chapman and Hall, New York, NY, pp. ix-xiv.
- Sagan, D. and L. Margulis. Bacterial bedfellows. In **Cooperation: Beyond the age of competition**. [The World Futures General Evolution Studies, vol. 4]. A. Combs, ed. Gordon and Breach, Philadelphia, pp. 121-125. (Reprinted from **Natural History**, 1987).
1993. Margulis, L., R. Guerrero and J.M. Camarasa. L'evolució del planeta Terra. pp. 27-33. La història de l'atmosfera i del clima. pp. 56-65. La història de la vida. pp. 74-79. In **Biosfera vol 1. Planeta viu**. R. Folch, ed. Enciclopèdia Catalana, S.A., Barcelona, Spain.
- Margulis, L. and D. Sagan. La vida, patrimoni de la Terra? In **Biosfera vol 1. Planeta viu**. R. Folch, ed. Enciclopèdia Catalana, S.A., Barcelona, Spain.
- Margulis, L. and D. Sagan. Biodiversity: A matter of species survival. In **Developing Biological Literacy: A guide to developing secondary and post-secondary biology curricula**. BSCS, Riverside, CA, pp. 59-63.
- Sagan, D. and L. Margulis. Gaia hypothesis. In **McGraw-Hill Yearbook of Science and Technology**. McGraw-Hill, New York, NY, pp. 155-156.
- Margulis, L. Microbial communities as units of selection. In **Trends in Microbial Ecology**. Guerrero, R. and C. Pedrós-Alió, eds. [Proceedings of ISME-6] Spanish Society for Microbiology, Baelona, Spain, pp. 349-352.
- Sagan, D. and L. Margulis. God, Gaia and biophilia. In **The Biophilia Hypothesis**, S. R. Kellert and E. O. Wilson, eds. Island Press, Washington DC. pp. 345-364.
1994. Margulis, L. Le parole sono grida di guerra: La simbiogenesi e il nuovo spazio per la biologia del mutualismo. In **Un'enciclopedia d'orientamento 59. Biologia Teorica**. Editoriale Jaca Book spa, Milano Italy, pp. 45-74.
- Margulis, L. Thinking like an ecosystem. Bacteria. In: **Almanac of the Environment: The ecology of everyday life**. V. Harms. The National Audubon Society. pp. 18.
- Margulis, L. and J. Cohen. Combinatorial generation of taxonomic diversity: Implication of symbiogenesis for the Proterozoic fossil record. In **Early Life on Earth. Nobel Symposium No. 84**. S. Bengtson, ed. Columbia University Press, New York, NY, pp. 327-333.
- Margulis, L. and M. McMenamin. Symbiosis. In **Evolution Extended: Biological debates on the meaning of life**. C. Barlow, ed. The MIT Press, Cambridge, MA. pp. 102-110.
- Margulis, L., R. Guerrero and D. Sagan. Els paisatges bacterians litorals. In **Biosfera vol 10. Litorals i oceans**. R. Folch, ed. Enciclopèdia Catalana, S.A. Barcelona, Spain, pp. 333-340.
- Sagan, D. and L. Margulis. Gaian views. In **Ecological Prospects: Scientific, religious and aesthetic perspectives**. C. K. Chapple, ed. SUNY Press, Albany, NY, pp. 3-9.
- Margulis, L. Living by Gaia. In **Talking on the Water**. J. White. Sierra Club Books, San Francisco. pp. 57-77.
- Margulis, L. Foreword. In **Hypersea**, M. McMenamin and D. McMenamin. Columbia University Press. pp. xiii-xiv.
1995. Margulis, L. and M. Dolan. Gaia: Cosmic beginnings, nonhuman ends. In **Cosmic Beginnings and Human Ends**. C. Matthews and R. Varghese, eds. Open Court, Chicago, IL, pp. 187-204.
- Sagan, D. and L. Margulis. Facing nature. In **Biology, Ethics and the Origins of Life**. H. Rolston, III, ed. Jones & Bartlett, Boston MA, pp. 39-62.
- Margulis, L. From kefir to death. In **How Things Are**. J. Brockman and K. Matson, eds. William Morrow & Co., New York. pp. 69-78. Reprinted 1999 in **Ecotropic Works**. J. Campion, ed. Ecotropic Works. pp. 94-99.
- Margulis, L. A pox called man. In **Science for the Earth**, T. Wakeford and M. Walters, eds. John Wiley & Sons, Ltd., United Kingdom, pp. 19-37.
- Margulis, L. and E. F. Karlin. Gaia, a new look at the Earth's surface. In **Technology and Global Environmental Issues**, W. J. Makofske and E. Karlin, eds. HarperCollins, New York, NY, pp. 336-352.

- Margulis, L. Gaia is a tough bitch. In **The Third Culture**. Brockman, J. Simon & Schuster, NY, pp. 129-146.
- Margulis, L. Powerless prototists. What to do about standards for 30,000,000 non-human species of organisms? In **One Science-One World? Quality, technology and training for global communication**. Proceedings of IFSE-7, July 18-22, 1993. M. Balaban, G. de Gaetano and M. Romagnoli, eds. IFSE, S. Maria Imbaro, Chieti, Italy, pp. 141-150.
- Margulis, L. and M. McMenamin. Symbiosis. In **Orígenes de la Vida. En el centenario de Aleksandr Ivanovich Oparin**. F. Moran, J. Peretó, A. Moreno, eds. Editorial Complutense, Madrid, Spain. pp. 215-224.
- Sagan, D. and L. Margulis. Life Sciences. Taxonomy. In **Encyclopedia of the Future**. S. Kurtz, ed. Macmillan Publishing Co., New York, NY, 2:562-564.
1996. Margulis, L. Jim Lovelock's Gaia. In **Gaia in Action: Science of the living earth**, P. Bunyard, ed. Floris Books, Edinburgh, Scotland, pp. 54-64.
- Margulis, L., Guerrero, R. and P. Bunyard. We are all symbionts. In **Gaia in Action: Science of the living earth**, P. Bunyard, ed. Floris Books, Edinburgh, Scotland, pp. 167-185.
- Sagan, D. and L. Margulis. Life Sciences. In **Encyclopedia of the Future**. G.T. Kurian and G.T.T. Molitor, eds. Simon & Schuster Macmillan, New York. 2: 562-564.
- Margulis, L. Five kinds of life or it is time to put life back into biology. In **Proceedings of the 6<sup>th</sup> Symposium on the Natural History of the Bahamas**. N. Elliott, D. G. Edwards, and P. J. Godfrey. Bahamian field Station San Salvador, Bahamas. June 9-13. pp. 1-3.
1998. Margulis, L. Foreword to English translation of **The Biosphere**, V. I. Vernadsky (1926). A Peter N. Nevraumont Book. Copernicus/Springer-Verlag, New York, NY, pp.14-19.
- Margulis, L. Papel de las bacterias en la simbiogénesis y la evolución. In **Libro de Resúmenes. II reunión científica de microbiología del medio acuático**. Girona, 29-31 de Mayo, 1998. Universitat de Girona, Spain. pp.157-158.
- Margulis, L. Una revolución en la evolución. In **Discursos de Investidura de Doctor Honoris causa de los profesores**. Universidad Autónoma de Madrid, Spain, pp. 65-83.
- Margulis, L., Sagan, D. and M. J. Chapman. Kingdom Bacteria. Kingdom Prototista. In **The Diversity of Living Organisms**. R. S. K. Barnes, ed. Blackwell Science Ltd. Oxford, United Kindom, pp. 3-28; 31-109.
- Margulis, L. Speculation on Speculation. In **Oxymoron: The Arts and Sciences Annual**. vol. 2. Oxymoron Media, Inc., New York, NY, pp. 78-81.
1999. Sagan, D. and L. Margulis. Evolution, natural selection. pp. 241-243 Gaia hypothesis. pp. 268-269. In: **Encyclopedia of Environmental Science**. D. Alexander and R. W. Fairbridge, eds. Kluwer Academic Publishers, Dordrecht, The Netherlands.
- Margulis, L. From kefir to death. In **Ecotropic Works**. J. Campion, ed. pp. 94-99. Reprinted from **How Things Are**. J. Brockman and K. Matson, eds. William Morrow & Co., New York, NY, pp. 69-78.
- Margulis, L. and D. Sagan. Foreword. In **Cloning the Buddha: The moral impact of biotechnology**. R. Heinberg. Quest Books, Wheaton, IL.
- Margulis, L. and D. Sagan. Foreword. In **Life Without Light: A journey to earth's dark ecosystems**. M. Stewart. Franklin Watts, Division of Grolier Publishing. New York, NY, pp. 4.
- Margulis, L. Proof positive for wet mergers in the eternal takeover. In **Predictions. Thirty great minds on the future**. S. Griffiths, ed. Oxford University Press, United Kingdom, pp. 159-167.
- Margulis, L. The Evolution of Gaia: A Conversation with Lynn Margulis. In **Twilight of the Clockwork God**. J. D. Ebert. Council Oak Books, Tulsa, OK, pp. 68-87.
- Margulis, L. Foreword. In **The Spirit in the Gene: Humanity's proud illusion and the laws of nature**. R. Morrison. Cornell University Press, Ithaca, NY, pp. vii-x.
- Lovelock, J. E. and L. Margulis. Atmospheric homeostasis by and for the biosphere: The Gaia hypothesis. In **Global Aspects of the Environment**, vol I. R. U. Ayres, K. Button and P. Nijkamp eds. Edward Elgar Publishing, Cheltenham, United Kingdom, pp. 57-64. Reprinted from 1974 *Tellus* 26: 2-10.
2000. Margulis, L. and 18 others. Foreword. In **Encyclopedia of the Biosphere**. vol. 1. **Our Living Planet**. The Gale Group, Detroit, MI, pp. 7-8.
- Margulis, L. Microbial Minds. In **Forces of Change: A new view of nature**. The Smithsonian Institution and National Geographic, Washington, DC. pp. 128-129.
- Margulis, L. Spirochetes. In: **Encyclopedia of Microbiology**. 2<sup>nd</sup> edition. J. Lederberg, ed. Academic Press, New York, NY, 4:353-363.
- Margulis, L. Symbiosis and the origin of protists. In **Environmental Evolution: Effects of the origin and evolution of life on planet Earth**. 2<sup>nd</sup> edition. MIT Press, Cambridge, MA, pp. 141-157.

- Margulis, L., Dolan, M.F. and R. Guerrero. The chimeric eukaryote: Origin of the nucleus from the karyomastigont in amitochondriate protists. In **Variation and Evolution in Plant and Microorganisms: Toward a new synthesis 50 years after Stebbins**. F. J. Ayala, W. M. Fitch and M. T. Clegg, eds. National Academy Press, Washington, DC. pp. 21-34. Reprinted from **Proceedings of the National Academy of Sciences** 97:6954-6959.
2001. Margulis, L. The Conscious Cell. In **Cajal and Consciousness: Scientific approaches to consciousness on the centennial of Ramón y Cajal's *Textura***. P. C. Marijuan, ed. Annals of the New York Academy of Sciences, New York, NY, vol. 929: 55-71.
- Margulis, L. Life from Scum. In **The Nature of Life: Readings in biology**. N. Carr, J. Couldson, M. Levine, G. Schoepfel, D. Whitfield and M. Stefanski, eds. The Great Books Foundation, Chicago, IL, pp.263-281.
- Margulis, L. Bacteria in the Origins of Species: Demise of the Neo-Darwinian Paradigm. In **A New Century of Biology**, W. J. Kress and G. W. Barrett, eds., Smithsonian Institution, Washington, DC. pp. 9-27  
Translation: Japanese, Yuri Oiwa, Tsukiji-shokan Publishing Co. Ltd. Japan pp. 25-56.
- Margulis, L. Microbes in Evolution. In **Jahrbuch 2001 des Collegium Helveticum der ETH Zurich**. H. Nowotny, M. Weiss and K. Hänni, eds. Zurich, Switzerland. pp. 285-289.
- Margulis, L. and D. Sagan. Foreword. In **The Nature of Life: Readings in biology**. N. Carr, J. Coulson, M. Levine, G. Schoepfel, D. Whitfield and M. Stefanski, eds. The Great Books Foundation, Chicago, IL. pp. xi-xvi.
- Margulis, L. and D. Sagan. Endosymbiosis. In **Plant Sciences**. Macmillan Reference USA. R. Robinson, ed. Gale Group, Farmington Hills, MI. pp. 111-113.
- Sagan, D. and L. Margulis. Eukaryotes, Origin of. In **Encyclopedia of Biodiversity**, vol 1. S. A. Levin, ed. Academic Press, San Diego, CA, 2: 623-633.
2002. Sagan, D. and L. Margulis. Gaia and the Ethical Abyss: A Natural Ethic Is a G[o]d Thing. In **The Good in Nature and Humanity: Connecting science, religion and spirituality with the natural world**. S. R. Kellert and T. J. Farnham, eds. Island Press. Washington, D.C, pp. 91-101.
- Margulis, L. Foreword. In **The Ice Chronicles**. P. Mayewski and F. White. University Press of New England, Hanover, NH. xv-xviii.
- Margulis, L. and D. Sagan, Five Kingdoms of Nature. In **Life On Earth: An encyclopedia of biodiversity, ecology and evolution**. vol. 1, N. Eldredge, ed. ABC-CLIO, Inc., Santa Barbara, CA. pp. 357-361.
- Margulis, L. and D. Sagan. Lichens. In **Life On Earth: An encyclopedia of biodiversity, ecology and evolution**. vol. 2, N. Eldredge, ed. ABC-CLIO, Inc., Santa Barbara, CA. pp. 469-471.
- Margulis, L. and D. Sagan. Microcosms. In **Human Experience I: Who am I?**. O. E. Katter Jr., eds. Tapestry Press, Ltd. Acton, MA. pp. 47-53.
- Margulis, L. and D. Sagan. Technology, life and evolution. In **MeQriMa CLEUP**. Editrice-Padova Italy, N. 4 Giugno pp. 140-147.
- Margulis, L. Foreword. In **Del Big Bang a Dolly (From the Big Bang to Dolly)**. C. Montúfar and G. Trueba, eds. University of San Francisco, Quito, Ecuador. pp. iii-iv.
2003. Margulis, L. and A. I. Tauber. Foreword. In **The Origins of Larvae**. D. Williamson. Port Erin Marine Laboratory, University of Liverpool, Kluwer Academic Publishers pp. ix-xiii.
- Guerrero R. FLS and L. Margulis FLS. The Linnean Task: the documentation and preservation of the world's biological diversity. Chapter 32, In **Biological Collections and Biodiversity** B.S. Rushton, P. Hackney and C.R. Tyrie eds. Westbury Publishing London, United Kingdom pp. 287-298.
2004. Margulis, L. Introduction: Gaia by any other name. In **Scientists Debate Gaia: The next century**. S. H. Schneider, J. R. Miller, E. Crist and P. J. Boston, eds. MIT Press, Cambridge, MA. pp. 7-12.
- Margulis, L. What is canopy biology? A microbial perspective. In **Forest Canopies**. 2<sup>nd</sup> edition. M. D. Lowman, and H.B. Rinker, eds. Elsevier/Academic Press, San Diego, CA. pp. 143-150.
- Margulis, L. La vida es como un tornado. In **Cara a Cara: Con la vida, la mente y el universo: Conversaciones con los grandes científicos de nuestro tiempo** (Face to Face: Mind, life and the universe). E. Punset. Planeta Publishers, Madrid. pp. 335-346.
- Margulis, L. Prologue. In **Cara a Cara: Con la vida, la mente y el universo: Conversaciones con los grandes científicos de nuestro tiempo** (Face to Face: Mind, life and the universe). E. Punset. Planeta Publishers, Madrid. pp. 9-12.
- Margulis, L. Mixing it up. In **Curious Minds: How one becomes a scientist**. J. Brockman. Pantheon Books, NY. pp. 101-109.
- Margulis, L. Mixing it up. In **When We Were Kids: How a child becomes a scientist**. J. Brockman. Jonathan Cape Publishers, London. pp. 101-109.

2005. Margulis, L. Foreword. In **Microbial Diversity: Form and function in prokaryotes**. O. Ogunseitan. Blackwell Science Ltd., Oxford, United Kingdom. pp. ix-xi.
- Melnitsky, H., F. Rainey and L. Margulis. The karyomastigont model of eukaryosis. In **Microbial Phylogeny and Evolution: Concepts and controversies**. J. Sapp, ed. Oxford University Press, NY. pp. 261-280.
2006. Sagan, D. and L. Margulis. Water and Life. In **Water**. M. Molina and A. Vizcaino, eds. American Natural, Mexico City, Mexico. Sagan, D. and L. Margulis. Agua y vida. In **Agua**. M. Molina and A. Vizcaino, eds. American Natural, Mexico City, Mexico. pp. 16-21.
- Margulis, L. Preface. Santa Rosalia and the Deity's Inordinate Fondness for Bacteria. In **Insect Symbiosis**. vol. 2. K. Bourtzis and T.A. Miller, eds. CRC Press, Taylor & Francis Group, Boca Raton, FL.
- Margulis, L. Foreword. In **Animate Earth: Science, intuition, and Gaia**. S. Harding. Chelsea Green Publishing, White River Junction, VT. pp. 7-12.
- Translation: Italian, Prefazione. In **Terra Vivente, Scienza, Intuizione e Gaia. International Lectures on Nature and Human Ecology**. ABOCA Edizioni, Sampato pressso, Italy, 11-17, 2008.
- Margulis, L. Life and evolution, 150 years after Darwin. In **Questioni di Natura e Cultura: Non solo DNA: Cellule e genomi-V corso**. C. Bernasconi, S. Garagna, G. Milano, C. A. Redi and M. Zuccotti eds. Pavia, Italy. pp. 129-134.
- Margulis, L. Foreword. D. Sagan Introduction. In **Dismantling Discontent: Buddha's way through Darwin's World**. C. Fisher. Elite Books, Santa Rosa CA. p. 442.
2008. Margulis, L. Gaia and machines. In **Back to Darwin: A richer account of evolution**. J. Cobb ed. William B. Eerdmans Publishing Company, Grand Rapids, MI. pp. 167-175.
- Margulis, L. and D. Sagan. The role of symbiogenesis in evolution. In **Back to Darwin: A richer account of evolution**. B. Cobb ed. William B. Eerdmans Publishing Company, Grand Rapids, MI. pp. 176-184.
2009. Fet, V. and L. Margulis. **Simbiogenez i B. M. Kozo-Polyansky** [Symbiogenesis and B. M. Kozo-Polyansky]. Pp. 6-9 In: *Sovremennoe sostoyanie, problemy i perspektivy regional'nykh botanicheskikh issledovaniy* [Current Status, Issues, and Perspectives of Regional Botanical Studies]. Materials of the International Research Conference Commemorating 90th Anniversary of Voronezh State University and 50th Anniversary of the Voronezh Branch of Russian Botanical Society (Voronezh, 6-7 February 2008). Voronezh State University, Voronezh, Russia, 343 pp (in Russian).
- Margulis, L. and D. Sagan. Endosymbiotic origin of eukaryotes. In **Evolution: The first four billion years**. M. Ruse and J. Travis eds. The Belknap Press of Harvard University Press, Cambridge, MA. pp. 534-541; 712-713.
- Margulis L. Genome acquisition in horizontal gene transfer: Symbiogenesis and macromolecular sequence analysis. In **Horizontal gene transfer: Genomes in flux (Methods in Molecular Biology series)**. M. Gogarten, L. Olendzenski and J. P. Gogarten, eds. Humana Press Inc., Totowa, NJ. pp. 181-191.
- Harding, S. and L. Margulis Water Gaia: 3.5 Thousand million years of wetness on planet Earth. In **Gaia in turmoil: Climate change, biodepletion, and Earth ethics in an age of crisis**. E. Crist and H. B. Rinker eds. pp. 41-59.
2010. Margulis, L. Plenary lecture, Symbiogenesis. A new principle of evolution rediscovery of Boris Mikhaylovich Kozo-Polyansky (1890-1957). In **Charles Darwin and modern biology**, Proceedings of the International Academic Conference, 21-23 September 2009. E. I. Kolchinsky and A. A. Sedotova, eds. Russian Academy of Sciences, St. Petersburg Scientific Center, St. Petersburg branch of the Institutes for the History of Science and Technology named after S. I. Vavilov. Nestar-Historia, St. Petersburg, Russia (English and Russian).
2011. Sagan, D. and L. Margulis. Foreword. In **The Mystery of Metamorphosis: A scientific detective story**. F. Ryan. Chelsea Green Publishing, White River Junction, VT. pp. xiii-xvii.
- Hall, J. H. and L. Margulis. From movement to sensation. In **Chimeras and Consciousness: Evolution of the sensory self**. Margulis L., C. A. Asikainen and W. E. Krumbein eds. Bellagio Conference, MIT Press, Cambridge, MA. pp. 159-166.
- Margulis, L. Preface. In **Chimeras and Consciousness: Evolution of the sensory self**. Margulis L., C. A. Asikainen and W. E. Krumbein eds. Bellagio Conference, MIT Press, Cambridge, MA. pp. xiii-xv.
- Scofield, B. and L. Margulis. Psychological Discontent: Science on our symbiotic planet. In **Ecopsychology: Science, Totems, and the Technological Species**. P. H. Kahn Jr., P. H. Hasbach, and J. H. Ruckert eds. Academic Press.
- Sagan, D. and L. Margulis. Eukaryotes, Origin of. In **Encyclopedia of Biodiversity** vol.1, 2<sup>nd</sup> edition. S. A. Levin ed. Academic Press, Burlington, MA.
- Margulis, L. Origin of evolutionary novelty by symbiogenesis. In **Biological evolution: Facts and theories: A critical appraisal of 150 years after "The Origin of species"** with address of Cardinal Levada. G. Auletta, M. Leclerc and R. A. Martinez, eds. Gregorian & Biblical Press, Piazza della Pilotta, Rome Italy. pp. 107-116.

## Chapters and Forewords in preparation or press

- Margulis, L. and D. Sagan. What if your great-great grandfather were green? In **What If?** John Michel, eds.
- Margulis, L. Foreword. In **The Center of a Universe**. M. Ogle.
- Margulis, L. Evolución bacteriana y formación de la célula eucariota. In **Del Big Bang a Dolly** 2<sup>nd</sup> edition. (**From the Big Bang to Dolly**). C. Montúfar and G. Trueba, eds. University of San Francisco, Quito, Ecuador.
- Margulis, L. Foreword. In Marie-Odile Book on Chatton.
- Sagan, D. and L. Margulis. Symbiogenetics: Toward a new science of prototaxis and parasexuality in the genesis of heritable variation. In **Proceeding of the evolution summit (2005)**. G. Trueba and C. Montufar eds. Universidad San Francisco de Quito (USFQ) Ecuador Galápagos.
- Guerrero, R. and L. Margulis. Darwin-wallace paradigm shift: The ten days that failed to shake the world. In **Evolution two centuries after Darwin from the Galapagos**. G. Trueba and C. Montufar eds. Linnean Society.
- Sagan, D. and L. Margulis. Historical perspectives. In **Evolution two centuries after Darwin from the Galapagos**. G. Trueba and C. Montufar eds. Linnean Society.
- Sagan, D. and L. Margulis. Interspecies Beings and Energetic Purpose. In **Beyond Mechanism: Putting Life Back into Biology**. B. Henning ed.

## TECHNICAL LETTERS, MEETING REPORTS AND EDITORIALS:

1968. Margulis, L. Visible light: Mutagen or killer? **Science** 160:1255.
1971. Margulis, L. Origin of life. [Meeting report, International Society of the Origin of Life, April 1970, Pont-à-Mousson, France]. **BioScience** 21:489-490.
1972. Propst, S., S. Banerjee, J. K. Kelleher and L. Margulis. Inhibition of cilia regeneration by antineoplastic agents: Delay of band migration by vinblastine (NSC-49842), griseofulvin (NSC-34533) and b-peltatin (NSC-24819). **Cancer Chemotherapy Reports Part 1** 56:557-558.
1974. Barghoorn, E. S., J. H. Troughton and L. Margulis. Dating the beginnings of photosynthesis. [Letter to the editor]. **American Scientist** 62:389.
1975. Margulis, L. and F. J. R. Taylor. Symposium on the evolution of mitosis in eukaryotic microorganisms. **BioSystems** 7:295-297.
1976. Margulis, L. The early Earth. [Meeting report, Second College Park Symposium, Oct. 29-Nov. 1, 1975, University of Maryland]. **Nature** 259:175-176.
- Rambler, M. and L. Margulis. Comment on Egami's concept of the evolution of nitrate respiration. **Origins of Life** 7:73-74.
1977. Margulis, L. Peer review attacked. [Letter to the editor]. **The Sciences** 17: 5, 31.
1979. Dastoor, M. N., L. Margulis and K. H. Nealson, eds. **Interaction of the Biota with the Atmosphere and Sediments**. [Final report, NASA Workshop on Global Ecology, October 18-20, 1979, Washington, DC.]. NASA, Washington, DC. xi + 147 pp.
1980. Margulis, L., J. F. Danielli and L. Wolpert. Short articles on unsolved problems. [Editorial]. **Journal of Theoretical Biology** 85:1-2.
- Margulis, L., K. H. Nealson and G. Tomlinson, eds. **Planetary Biology and Microbial Ecology: Summer program research report**. NASA Life Sciences, Washington, DC. 203 pp.
- Watson, A. J., J. E. Lovelock and L. Margulis. Discussion: What controls atmospheric oxygen? [Letter to the editor]. **BioSystems** 12:123-125.
1983. Giusto, J. P. and L. Margulis. Karyotypic fissioning. [Two letters to the editor]. **BioSystems** 16:169-170, 171-172.
- Margulis, L., K. H. Nealson and I. Taylor, eds. **Planetary Biology and Microbial Ecology: Biochemistry of carbon and early life**. [NASA Technical Memorandum 86043; summer program research report, 1982]. NASA, Scientific and Technical Information Branch, [Washington, DC.], xi + 135 pp.
- Thiemann, W. and L. Margulis. Seventh International Conference on the Origins of Life and the fourth meeting of ISSOL. [Mainz]. **ISSOL** 11: 2.
1984. Margulis, L. Catalunya. **ISSOL** 12: 4-6.
- Margulis, L. U. Autónoma Mexico. **ISSOL** 12: 4.
- Margulis, L. and B. D. Dyer. Meeting report: 5th International Meeting International Society for Evolutionary Protistology [Jun 4-6, 1983, Banyuls-sur-Mer, France]. **BioSystems** 16 :365-368.
- Margulis, L., M.-O. Soyer-Gobillard and J. Corliss, eds. **Evolutionary Protistology: The organism as cell**. [Proceedings of the 5th Meeting of the International Society for Evolutionary Protistology, June 1983, Banyuls-sur-Mer, France].

- Reidel, Dordrecht, xii + pp. 169-352. [Reprinted from **Origins of Life** 13, no. 3-4, 1984, pp. 169-352].
1985. Margulis, L. Undulipodiated cells. **BioScience** 35: 333.  
Margulis, L. and D. Sagan, eds. **The Global Sulfur Cycle**. [NASA Technical Memorandum 87570; summer program research report, 1984; coordinated publication effort]. NASA, Scientific and Technical Information Branch, xii +262 pp.  
Margulis, L. Gaia minus man. [Letter to the editor]. **Outside** 10: 8.
1986. Margulis, L. From ecology to geognosy. [Letter to the editor]. **Ecologist** 16: 52-53.  
Sagan, D., H. I. McKhann, M. Dolan and L. Margulis. **The Internship Experience: NASA planetary biology internship program 1980-1986**. NASA Life Sciences, Washington, DC. viii + 170 pp.
1987. Margulis, L., R. Guerrero and I. Esteve. Session on early biochemical and cellular evolution. **ISSOL** 15: 7-8.  
Margulis, L. The way of all neurons. [Letter to the editor]. **The Sciences** 27: 11.
1988. Margulis, L. Lynn Margulis replies [to Letters to the editor re: **The Health of Nations**]. **New York Times Book Review** January 10: 35.
1989. Hinkle, G. and L. Margulis. Non-Mendelian genetic systems. [Meeting report: 16th International Genetics Congress, Toronto]. **Genome** 31: 486-487.  
Margulis, L. and K. H. Nealon. Symbiosis as the source of evolutionary innovation: Thoughts before the Bellagio-Conference. **Endocytobiosis and Cell Research** 6: 235-239.
1990. Margulis, L. Heat exchange. **The Sciences** 30: 4-5.  
Margulis, L. Kingdom come. [Letter to the editor]. **New Scientist** 127: 65.  
Margulis, L. [Letter to the editor]. **Creative Woman** 10: 34.
1991. Margulis, L. Evolution of eukaryotes. [Letter to the editor re: *Giardia*: A missing link between prokaryotes and eukaryotes. K. S. Kabnick and D. A. Peattie]. **American Scientist** 79: 187-188.  
Margulis, L. Lynn Margulis replies. [to Peter Satir's letter "Mystery guest"]. **The Sciences** 31: 7.  
Margulis, L. and R. Fester. Bellagio conference and book *Symbiosis as a Source of Evolutionary Innovation: Speciation and morphogenesis*. **Symbiosis** 11: 93-101.  
Margulis, L. Protoctists and polyphyly: comment on "The number of symbiotic. by T. Cavalier-Smith. **BioSystems** 28: 107-108.
- Dolan, M., L. Olendzenski, L. Margulis, D. Sagan and S. Hiebert, eds. **The Internship Experience: NASA planetary biology internship program 1986-1992**. NASA Life Sciences, Washington, DC. iv + 143 pp.
1993. Margulis, L. Gaia in **Science**. [Letter to the Editor]. **Science** 259: 745.  
Margulis, L. Letter to the editor. **The Skeptical Inquirer** 17: 334.  
Margulis, L. The power of misrepresentation. [Letter to the Editor]. **Whole Earth Review** 78: 123.  
Margulis, L. Letter to the editor. **Sierra** July/August 32  
Margulis, L. The powerful protoctists. [Letter to "Advice and Dissent"]. **The Journal of NIH Research**. 5: 14,16.  
Margulis, L. and G. E. Fox. Early biological evolution. [Report on ISSOL '93 session S5] **The Newsletter of ISSOL** 20: 17-19.
1996. Margulis, L. NASA's Life Science. [Letter to the Editor] **Science** 271: 431.  
Margulis, L. and M. Dolan. Reply to "Our Symbiotic Origins?" [Letter to the Editor] **The Sciences**. Jul/Aug: 47.  
Margulis, L. and M. Dolan. Not all symbioses are microbial: Newfoundland's whales and fossils. Trinity Bay, Newfoundland, Canada [July 11-15, 1997] Meeting report. **Symbiosis** 24: 173-178.
- Chapman, M. J., A. Dornhaus and L. Margulis. The *Gunnera-Nostoc* nitrogen-fixing symbiotic consortium. [Abstract] In **Symbiogenesis and carcinogenesis: International Congress on Endocytobiology, Symbiosis and Biomedicine**. Endocytobiology VII, Freiburg, Germany. April 5-9. 1999. Margulis, L. Science and faith. [Letter to the editor] **Mother Jones** Jan/Feb, pp. 10-11.
- Margulis, L. and M. Dolan. Did centrioles and kinetosomes evolve from bacterial symbionts? Report of the Henneguy-Lenhossek theory meeting. **Symbiosis** 26: 199-204.
1999. Margulis, L. and A. Wier. Leidy's termites and his other backyard bugs. Conference Proceedings. Invertebrates in Captivity Conference '99. **Sonoran Arthropod Institute**, pp. 1-9.  
Margulis, L. and M. Dolan. [Letter to the editor] What's going on at Temple University? **Skeptical Inquirer** Jan/Feb. pp. 66.
2000. Benson, J., M. F. Dolan and L. Margulis, eds. **The Internship Experience: NASA planetary biology internship program 1993-2000**. NASA Life Sciences, Washington, DC. i-159 pp.  
Margulis, L. and R. Guerrero. Towards a unified microbiology. **Forum Microbiologicum** Spring/Summer 2000. Capetown, South Africa. pp. 4-5.

2004. Margulis, L. Biosphere technologies and the myth of individuality. In **The Future of Human Nature. Symposium** Boston University, pp. 45-48.
2005. Margulis, L. Doing science as a way of knowing: Living sands and the epic of evolution. In Seamless culture through science communication. The NISTEP International Colloquium, Tokyo, Japan. Published in Japanese. **The National Institute of Science and Technology Policy** pp. 30-71.
2006. Stephens, E. A., M. F. Dolan, L. Margulis, B. Scofield and D. Sagan. eds. **The Internship Experience: NASA planetary biology internship program 2001-2006**. Sciencewriters, Amherst, MA. i-90 pp.
2007. Dolan, M. F. and L. Margulis. Advances in biology reveal truth about prokaryotes. **Nature** 445: 21.  
Margulis, L., M. Chapman, and M. F. Dolan. Semes for analysis of evolution: de Duve's peroxisomes and Meyer's hydrogenases in the sulfuriferous Proterozoic eon. **Nature Reviews-Genetics** Online [www.nature.com/nrg/index.html](http://www.nature.com/nrg/index.html).  
Margulis, L. Darwin's truths and symbiogenesis. In **Darwin @ Cornell 2008**, W.D. Allmon and P.R. Hoover, eds. **Paleontological Research Institution**, Special Publication No. 33, pp. 27-48.
2009. Margulis, L. Forum for Scientific Method in Biology. A. Carusi, B. Rodriguez and J. Wakefield, conveners. **Oxford e-Research Centre**, University of Oxford, UK.

## NON-TECHNICAL PUBLICATIONS:

1962. Sagan, L. Notes on the revolution in biology today. **Graduate Journal (University of California)** 1: 3-9.
1963. Sagan, L. The dilemma in popularization. **Graduate Journal (University of California)** 2: 57-60.
1964. Sagan, L. Communications: An open letter to Mr. Joe K. Adams. **Psychedelic Review** 1: 354-356.
1966. Sagan, L. Growing your own changes. **Nature and Science** 3: 6-7.  
Sagan, L. Quick counting. **Nature and Science** 4: 10-11.
1968. Margulis, L. Why I am not a humanistic Jew. **Humanistic Judaism** 1: 23-24.
1971. Margulis, L. The origin of plant and animal cells. **American Scientist** 59: 230-235.
1975. Margulis, L. and J. E. Lovelock. The atmosphere as circulatory system of the biosphere -- The Gaia hypothesis. **CoEvolution Quarterly** 6: 30-40.
1976. Ballester, A., E. S. Barghoorn, D. B. Botkin, J. Lovelock, R. Margalef, L. Margulis, J. Oró, R. Schweickart, D. Smith, T. Swain, J. Todd, N. Todd and G. M. Woodwell. Ecological considerations for space colonies. **CoEvolution Quarterly** Winter: 96-97.  
Margulis, L. Is balance really possible where even gravity is manufactured? Comments on O'Neill's space colonies. **CoEvolution Quarterly** 9: 7.  
Margulis, L. and J. E. Lovelock. Is Mars a spaceship, too? **Natural History** 85: 86-90.
1977. Margulis, L. Life on the early Earth. **Engineering and Science Magazine** 40: 13-19.  
Margulis, L. Strange ancestral relations. **Cosmos** 1: 41-45.  
Margulis, L. and J. E. Lovelock. Planet Earth is our only hope. **Geographical Magazine** 49: 473-478.  
Margulis, L. and J. E. Lovelock. The view from Mars and Venus. **The Sciences** 17: 10-13.  
Rambler, M. B., L. Margulis, J. Schaadt and G. P. Fulton. Use of the interactive lecture system in the teaching of microbiology. **ASM News** 43: 270.
1980. Lindegren, C. L. and L. Margulis. Dogma & iconoclasm in biology: The gene is not enough. **CoEvolution Quarterly** No. 26: 60-68.  
Margulis, L. After Viking: Life on Earth. **The Sciences** 20: 24-26.  
Margulis, L. and J. E. Lovelock. L'atmosphère est-elle le système circulatoire de la biosphère? L'hypothèse Gaïa. **CoEvolution (Paris)** 1: 20-31.
1981. Hammond, A. and L. Margulis. Creationism as science: Farewell to Newton, Einstein, Darwin. **Science** 81: 55-57.  
Margulis, L. Gaia lives, has blurred boundaries. **CoEvolution Quarterly** Spring, pp. 63-65.  
Margulis, L. How many kingdoms? Current views of biological classification. **American Biology Teacher** 43: 482-489.  
Margulis, L. La Terre, île de vie. **CoEvolution (Paris)** 5: 31-33.
1982. Margulis, L. Symbiosis and the evolution of the cell. In: **1982 Yearbook of Science and the Future**. Encyclopedia Britannica Yearbooks, Chicago, pp. 104-121.  
Margulis, L. L'agenda de la vie. **CoEvolution (Paris)** 7: 3.
1983. Kaveski, S. and L. Margulis. The "sudden explosion" of animal fossils about 600 million years ago: Why? **American Biology Teacher** 45: 76-82.

- Kaveski, S., L. Margulis and D. C. Mehos. There's no such thing as a one-celled plant or animal. **Science Teacher** 50: 34-36, 41-43.
- Margulis, L. Naissance de la naissance. **CoEvolution (Paris)** 12: 59-63.
- Margulis, L. and J. E. Lovelock. Le petit monde des pâquerettes: Un modèle quantitatif de Gaïa. **CoEvolution (Paris)** 11: 48-52.
1984. López Cortés, A., L. Margulis and J. Stolz. Las comunidades microbianas estratificadas de Baja California Norte. **Ciencia y Desarrollo** 59: 45-52.
- Margulis, L. and T. H. Kunz. Glimpses of biological research and education in Cuba. **BioScience** 34: 634-639.
1985. Margulis, L. and D. Sagan. El origen de las células eucariontes. **Mundo Científico** 46: 366-374.
- Margulis, L. and D. Sagan. L'origine des cellules eucaryotes. **La Recherche** 163: 200-208. Reprinted in 2000. **La Recherche** 331: 81-84.
- Sagan, D. and L. Margulis. The riddle of sex. **Science Teacher** 52: 16-22.
- Stolz, J. F. and L. Margulis. Obituary: Professor Elso Sterrenberg Barghoorn, 1915-1984. **Precambrian Research** 27: 401-402.
1986. Margulis, L. and D. Sagan. Strange fruit on the tree of life. **The Sciences** 26: 38-45.
1987. Margulis, L. Scientists decry a slick new packaging of creationism. [W. J. Bennetta, ed.] **Science Teacher** 54: 36-43.
- Margulis, L. and D. Sagan. Microcosmos: The universe within us reveals evolution's secrets. **Bostonia** 61: 55-58.
- Sagan, D. and L. Margulis. Bacterial bedfellows. **Natural History** 96: 26-33.
- Sagan, D. and L. Margulis. Cannibal's relief: The origins of sex. **New Scientist** 115: 36-40.
- Sagan, D. and L. Margulis. Gaia and the evolution of machines. **Whole Earth Review** 55: 15-21.
1988. Margulis, L. Intimate evolution of a nature lover. In **Gifted Young in Science: Potential through performance**. P. F. Brandwein and A. H. Passow, eds. National Science Teachers Association, Washington, DC. pp. 367-369.
- Margulis, L. Lynn Margulis. **Whole Earth Review** 61 (20th Anniversary Issue) 86.
- Margulis, L. Seventy-five reasons to become a scientist. [Reason 61]. **American Scientist** 76: 461.
- Sagan, D. and L. Margulis. Biological perspectives: An overview. In **Theme and Variations: The impact of great ideas**. L. Behrens and L. J. Rosen, eds. Scott, Foresman, Glenview, IL. pp. 825-832.
1989. Margulis, L. Gaia: The living Earth. An Elmwood dialogue with Lynn Margulis and Fritjof Capra. **Elmwood Newsletter** 5: 1, 8-9.
1990. Margulis, L. Lynn Margulis. Confessions of a nature lover. In **Minds for History Directory**. Minds for History Institute at Arcosanti, Mayer, AZ. pp. 38-47.
- Margulis, L. and M. McMenamin. Marriage of convenience: The motility of the modern cell may reflect an ancient symbiotic union. **The Sciences** 30: 31-37.
- Margulis, L. and D. Sagan. Water and Gaia. **Annals of Earth** 8: 24-25
1991. Margulis, L. Lynn Margulis on Gaia and garbage. **Gaian Science** May-July, pp. 11-12.
- Margulis, L. Students will learn by doing. **Science Scope** 14: 16.
- Margulis, L. and D. Sagan. Life after competition. **Best of Edges** 4: 26-27.
- Sagan, D. and L. Margulis. Gaia: A "good four-letter word". **Gaia Magazine** 3: 4-6.
1992. Margulis, L. Rethinking life on Earth. The parts: Power to the protocists. **Earthwatch Journal** 11: 25-29.
- Margulis, L. La sonrisa del gato. Mitosis y movilidad celular: Un mismo origen simbiótico. **Ciencias** 27: 11-16.
- Margulis, L. (with M. Domínguez and J. Peretó). La terra: Un planeta rodó. **El Temps** IX 398: 62-64.
1993. Margulis, L. The red shoe dilemma. In **A Hand Up: Women mentoring women in science**. D. Fort, ed. The Association for Women in Science, Washington, D. C. pp. 160-163.
- Cole, C. with L. Margulis and D. Sagan. Microbial microcosm. In **In Context** 34: 18-20.
- Haglund, K. with L. Margulis. The landmark interviews. Come the evolution. **The Journal of NIH Research** 5: 65-72.
- Margulis, L. The inheritance of acquired microbes. **Current Contents/Citation Classic**. Institute for Scientific Information. 24: 8-9.
- Margulis, L. and D. Sagan. I progenitori a sessuati. **SFERA** 37: 20-23.
- Margulis, L. Under high pressure. **Science** 259: 745.
1994. Margulis, L. Essay: Sex, death and kefir. **Scientific American** 271:2:96.
1995. Margulis, L. and L. Olendzenski. In Memoriam: Kenneth Estep (1952-1995). **Journal of Eukaryotic Microbiology** 42: 652-654
1996. Margulis, L. René Descartes y la negación de la presencia vital. **Quark** 3: 13-21.
- Margulis, L. The next 35 years of microbiology. In A billion seconds of THE SCIENCES Fin-de siècle perspectives on



- science ±35 years. **The Sciences** 36: 6,7,9,11,12,16.
- Margulis, L. Putting science first: Memories of family science experiences. **Science and Children**, October, 34:29-30.
- Cáceres, J. and L. Margulis. Entrevista. Lynn Margulis: “No destruïrem el planeta, però sí que podem destruir-nos a nosaltres mateixos.” **El Temps Ambiental**. March, pp. 7-9.
1997. Margulis, L. and M. Dolan. Swimming against the current. **The Sciences** 37: 20-25.
- Margulis, L. and D. Sagan. Stamps and small steps: The origins of life and our cells. **Netview. Global Business Network News** 8: 1-6.
1998. Margulis, L. Collecting, classifying, naming, knowing: The tasks of Tring. **Special Section, The Natural World. The New York Times**, June 2, pp. 4.
- Margulis, L. Dear Susan B. In A woman’s worth: 1857 letter echoes still. P. Cohen. **Arts & Ideas. New York Times**. July 18, pp. 15, 17.
- Margulis, L. and M. Chapman. Gaia and biospheres. **The Columbia Earth Institute: Earth matters** Spring, p. 7, 24.
- Guerrero, R. and L. Margulis. Stone soup. **The Sciences** 38: 34-38.
- Sagan, D. and L. Margulis. Academic apartheid and the universal university. **Netview. Global Business Network News** 9: 23-26.
- Margulis, L. Life on Earth doesn’t need us. **The Independent** Sept. 2, Comment/5.
- Sagan, D. and L. Margulis. Academic apartheid and the universal university. **UNESCO Nature & Resources** 34: 4-6. (English, French and Spanish)
- Margulis, L. Another four-letter word: Gaia. **Whole Earth Magazine** Winter: 49-50.
- Margulis, L. Uno revolución en la evolución. In Discoursó de investidura como Doctor ‘Honoris Causa’ de los Profesores. **Universidad Autónoma de Madrid** pp. 55-150.
1999. Margulis, L. and L. Brynes. Hard testimony: Teaching past environments with fossil foraminifera. **UNESCO Nature & Resources** 35: 4-17. (English, French and Spanish).
- Margulis, L. and L. Brynes. Rock not always a hard place. Manufacturing minerals is a life process. **Whole Earth Review** Fall: 68-71.
- Margulis, L. Forced to choose. **American Scientist** Nov-Dec. 87: 545-547
- Margulis, L. This view of Stephen Jay Gould. **Natural History** 108: 52-53.
- Kittredge, J., L. Margulis and D. Sagan. Bacteria in perspective. Five kinds of life. **The Natural Farmer**, pp. 10-11.
- Margulis, L. and D. Sagan. Second nature. Welcome to the machine. **UMASS Magazine** 4: 24-29.
2000. Guerrero, R., L. Margulis and M. Dolan. Inventory the microcosmos! **Whole Earth Review** Fall, pp. 14-17.
- Margulis, L. and D. Sagan. The microcosm. **Wild Earth** Fall 2000, pp. 12-16.
- Margulis, L. and D. Sagan. L’origine des cellules eucaryotes. **La Recherche** 331: 81-84. Reprinted from 1985. **La Recherche** 163: 200-208.
- Wier, A. and L. Margulis. The wonderful lives of Joseph Leidy (1823-1891). **International Microbiology** 3:55-58.
2001. Margulis, L. and D. Sagan. Marvellous microbes. **Resurgence**. May/June 2006: 10-12.
- Margulis, L. and J. Rummel. Life in NASA and the rest of the universe: New scientific opportunities. **BioScience** 51: 317.
- Margulis, L. and D. Sagan. The beast with five genomes. **Natural History**. June, pp. 38-41.
- Margulis, L. and K. V. Schwartz. Systematics and the kingdoms of life. Exerpted by Richard Schrock from **Five Kingdoms: An illustrated guide to the phyla of life on Earth**, 3<sup>rd</sup> ed. **Kansas Biology Teacher** 10: 10-13.
- Margulis, L. La resistencia del planeta. **La Vanguardia**. June 10, p. 32.
- Margulis, L. What is canopy biology? A microbial perspective. In Canopy Forum, H.B. Rinker, ed. **Selbyana** 22: 232-238.
- Margulis, L. Origen de las especies y la herencia de microorganismos asquiridos. **Iberica: Actualidad tecnológica**. 446: 516-517.
2002. Margulis, L., D. Sagan and J. H. Whiteside. From cells to cities. **Alexander von Humboldt Kosmos** 79: 23-24.
2003. Gunnard, J., A. Wier, L. Margulis. Mycological maestros: In the Ecuadoran rainforest, a “missing link” to the evolution of termite agriculture? **Natural History** 5: 22-26, 74.
- Margulis, L. Simbiosi i Térmits: Un món a vessar de misteris. **Mètode-Universitat de València**, Burjassot, Spain. 38: 29-35, 37.
- Margulis, L. Biology’s renaissance man, quote in **The Scientist** 17: 14, 18.
- Margulis, L. and R.Guerrero. (Poetry) Translation of la casada infiel (The Unfaithful Wife by Federico Garcia Lorca). **The Massachusetts Review**, Amherst MA. 44: 505, Fall.

2004. Margulis, L. On syphilis and Nietzsche's madness: Spirochetes awake! **Daedalus** (American Academy of Arts and Sciences) Fall: 118-125.
- Margulis, L. Mixing It Up: How I became a scientist. **Natural History**. 113: 80.
- Margulis, L. Serial endosymbiotic theory (SET) and Composite individuality: Transition from bacterial to eukaryote genomes. **Microbiology Today**, UK. 31: 172-174.
2005. Margulis, L. and B. P. Eldridge. What a revelation any science is!: 100 year anniversary of Howard T. Ricketts discovery of arthropod-borne pathogens. **ASM News**. 71: 65-70.
- Margulis, L. Gaia, el darwinismo y la evolución de las máquinas. **Banquete Cento Cultural Conde Duque**. pp. 6-7.
- Margulis, L. In memoriam, Ernst Mayr (1904-2005). **Mètode-Universitat de València**, Burjassot, Spain. 45: 11-17.
- Margulis, L. La sífilis i la bogeria de Nietzsche: Espiroquetes a l'atac. **Mètode-Universitat de València**, Burjassot, Spain. 47: 39-46.
- Margulis, L. Ernst Mayr, Biologist extraordinaire. **American Scientist**. 93: 200-201.
- Margulis, L. Jointed threads. **Natural History**. June, pp. 28-32.
- Margulis, L. The names of life. **American Scientist**. 93: 290.
- Margulis, L. The problem of life. **Project Syndicate**. News-service.
- Margulis, L. Evolution in Ecuador. **American Scientist**. 93: 386.
- Margulis, L. and A. H. Knoll. Elso Sterrenberg Barghoorn Jr. 1915-1984. A Biographical Memoir, **National Academy Press**. Washington DC. 87: 2-19.
- Sagan, D. and L. Margulis. Candidiasis and the origins of clowns. **New England Watershed Magazine**. 1: 16-20, 25.
- Margulis, L. Science, The rebel educator: I. **American Scientist**. 93: 482.
- Margulis, L. and D. Sagan. Ist das Leben ein endloser Kampf ums Überleben? [Is life really a never-ending struggle for survival?] In Evolution: Die Wege des Lebens [Evolution: Tracing the Odyssey of Life]. **Deutsche Verlags-Anstalt**. Dresden: Stiftung Deutsches Hygiene-Museum, Germany. pp. 49-59.
- Margulis, L. Symbiosis in cell evolution in God (or not), physics and, of course, love: Scientists take a leap: 'What do you believe is true even though you cannot prove it?' ... "our ability to perceive signals in the environment evolved directly from our bacterial ancestors" **The New York Times**, January 4, D3.
- Margulis, L. The red shoe dilemma. In A Hand Up: Women mentoring women in science, 2<sup>nd</sup> ed. D. Fort, ed. **The Association for Women in Science**, Washington, D. C. pp. 219-224.
- Margulis, L. Sigma Xi Annual meeting and student research conference: Letter from the President.p. 2.
- Margulis, L. Simbiogènesi: Motor de l' evolució? **Omnis Cellula**. Barcelona, Spain. 9: 15-21.
- Margulis, L. Un gran conflicte en la biologia: Autopoiesis contra mecanicisme. **Omnis Cellula**. Barcelona, Spain. 9: 15-21.
- Sagan, D. and L. Margulis. Gaia and its humans. In the **Marion Institute** conference publication for Bioneers by the Bay: Connecting for change, October 14-16. Marion, MA. pp. 21-26.
- Margulis, L. Hans Ris (1914-2004) Genophore, chromosomes and the bacterial origin of chloroplasts. **International Microbiology**, 8:145-148.
- Margulis, L. Lynn Margulis replies. [to Donald A. Windsor and Michael McMahan letters "Leidy's Legacy"]. **Natural History** Oct. p. 10, 66.
2006. Margulis, L. Science, The rebel educator: II. **American Scientist**. 94: 2.
- Margulis, L. The rebel educator: III. **American Scientist**. 94: 98.
- Margulis, L. The phylogenetic tree topples. **American Scientist**. 94: 194.
- Margulis, L. Prejudice and bacterial consciousness. **New England Watershed Magazine**. 1: 53-55. .
- Margulis, L. La teoría de la evolución ¿Por qué somos como somos? In El impacto de la ciencia en la sociedad, **Enigmas todavía por descubrir**. Fundacion Santander Central Hispano. pp. 53-61.
- Margulis, L., Sin Ciencia no hay Cultura, III Congreso sobre Comunicación Social de la cincia La Coruña. R. Núñez Centella, editor. Museo Científicos Coruñeses, Spain. pp. 27-32.
- Margulis, L. and E. Case. The Germs of life. **Orion**. November/December. pp. 70-71.
- Margulis, L. Bacteria are us. In "What is your dangerous idea?" The Edge Annual Question. J. Brockman, **Edge: The world Question Center**, www.edge.org.
- Margulis, L. La sífilis y la locura de Nietzsche: Espiroquetas al ataque. **Mètode-Universitat de València**, Burjassot, Spain. Anuario 2006: 42-50.
2007. Margulis, L. Conceits [reprinted from **Luminous Fish**]. **The Common Review**. 5: 34-43.

2009. Margulis, L. and P. Raven. The Herbal of Rumphius, A 17th century Dutch naturalist established the botanical foundations of the flora of Indonesia. **American Scientist** 97:8-9.
- Margulis, L. Quite well. In Big Questions Series, 5. Does evolution explain human nature? Twelve views on the question. **John Templeton Foundation** (online, newspapers and magazines in USA and UK).
- Margulis, L., L. Rico and D. Sagan. Propiocepción: la internalización del afuera (Proprioception: The outsiders become the body). In **Banquete** 2<sup>nd</sup> edition, L. Rico, ed. Planetary Publishers, Madrid.
- Margulis, L. and C. P. Davenport. The evolution revolution: How do species originate anyway? **Whole Terrain**, Antioch University New England Graduate School, Keene, NH. pp. 31-36.
- Margulis, L. Revolución en la evolución. In **Ciencia200809 de Fernández Bayo, Ignacio**. Caja de Burgos Obra Social. Caja de Ahorros Municipal de Burgos, Spain. pp. 70-73.
2010. Guerrero, R., L. Margulis and V. Fet. Sdvig paradigm Darvinom i Uollesom: Desyat' dnei, kotorye ne potryasli mir. [Darwin-Wallace Paradigm Shift: Ten days that failed to shake the world], Russian, tr. V. Fet. In **Istoriko-biologicheskie issledovaniya [Studies in the History of Biology]**, The Russian Academy of Sciences, Nestor-Historia Publishers, St. Petersburg, Russia. 2:85-90.
2011. Dolan, M. F. and L. Margulis. Hans Ris 1914-2002. **Biographical Memoirs**. National Academy of Sciences. Washington, DC. pp. 3-12.

Non-technical publications in preparation or press

- Margulis, L. and M. F. Dolan. From microbial transformation to mental titillation: Aspects of the spirochete hypothesis.
- Margulis, L. and D. Sagan. Classification of living things and the Five Kingdom system. **Lincoln Library of Essential Information** 44<sup>th</sup> edition Cleveland, OH.
- Margulis, L. and J. MacAllister. Opposite of science peer review ensures scientific thought control. B. Clarke, ed. Configurations: Journal of literature, science, and technology. Society for Literature, Science and the Arts (SLSA). **John Hopkins University Press and Georgia Tech University Press**.

FILMS-16mm: All donated to Smith College Library non-print archives and others transferred to electronic media

1973. **Stentor coeruleus: Oral membranellar band regeneration**. With S. Banerjee and J. G. Schaadt. Boston University. 12 min. Color
1976. **Hindgut flagellates from *Coptotermes formosanus* (Hawaii)**. With J. G. Schaadt and L. To. Boston University. 6 min. Color and black & white
- Spirochetes**. With J. G. Schaadt. Boston University. 8 min. Color and black & white
1977. **Microbes from *Pterotermes occidentis***. With A. T. W. Cheung. California Institute of Technology. 10 min. Black & white, high-speed
1978. **Microtubules and termite hindgut spirochetes**. With L. To and D. Chase. American Society of Cell Biology, Nov. 4-8, San Antonio, TX. (Abstract in **Journal of Cell Biology**). 10 min. Color
- Pterotermes occidentis*: A dry wood termite and its microbiota**. With J. G. Schaadt and L. To. 12 min. Color
1981. **Undulipodia and spirochetes**. 6 min. Black & white
1985. **Cell motility**. With L. Olendzenski and J. G. Schaadt. 11 min. Color and black & white
- Miles to microns**. With J. Stolz, J. G. Schaadt and L. Olendzenski. 12 min. Color
1987. **Miles to microns**. Short version, with L. Olendzenski. 5 min. Color
1989. **Bacterial virtuositities**. With L. Olendzenski.
2011. **Developmental Biology Films Preservation Project:**  
Rescue, preservation and delivery to the Libraries of UMass Amherst and the Library of Congress of 75 (NSF funded, post=Sputnik, 1969-1972 16 mm research films).

VIDEOS:

1982. Margulis, L. and K. McSchefferey. **Five Kingdoms of Life**. Boston University. 33 min.
1985. Margulis, L. and R. L. Bondurant. **The Gaia hypothesis**. NASA Lewis Research Center, Cleveland. Distributed by NASA CORE, Oberlin, OH. 57 min.
1986. Margulis, L., L. Olendzenski, J. G. Schaadt and G. R. Fleischaker. **Cell Motility**. 14 min.
1991. Margulis, L. and L. Olendzenski. **Life Histories of Common Fungi**. Distributed by Ward's Natural Science Establishment.

- Margulis, L. and L. Olendzenski. **Dreaming the Dream: A Voyage with the Resource Institute Aboard "Crusader" (Southeast Alaska)**. Resource Institute. 10 min.
1992. Margulis, L. and L. Olendzenski. **Microbial Mat Spirochetes**. 10 min.  
Margulis, L. and L. Olendzenski. **Microbial Mat Amoebae**. 12 min.  
Margulis, L. and L. Olendzenski. **Arthromitus**. 8 min.
1993. Margulis, L. and L. Olendzenski. Our Living Planet Earth Video Series. Part I: **Origins of Life**. Part II: **Five Kingdoms of Life**. Part III: **People Are Mammals**. Ward's Natural Science, Rochester, N.Y. 10 min. each. Color, 1/2".
1994. Margulis, L. and R. Guerrero. **Phragmites pigment cells**. 4 minutes.
1995. Margulis, L. and L. Olendzenski. **Banded iron formation**. 8 minutes.
1996. Margulis, L. and D. Sagan. Music by J. Sagan. Video production, L. Olendzenski and L. Margulis. **Gaia to Microcosm: (30 minutes four part video) 1) Bacteria to biosphere. 2) Photosynthetic bacteria - Sunlight transformers. 3) Spirosymplokos deltaeiberi - Microbial mats and mud puddles. 4) Ophyrdium versatile - What is an individual?** Teacher's video guide. Kendall/Hunt, Dubuque, IA.
- Margulis, L. and L. Olendzenski. **Kefir: The drinkable symbiosis**. 4 minutes.
1997. Margulis, L. and M. McMenamin. **Geology: Time of appearance of major life forms in the fossil record**. 10 minutes.
1998. Olendzenski, L., S. Goodwin and L. Margulis. **Looking at Microbes**. vol. I. Introduction. 1) **Using the microscope**. 2) **Making media**. 3) **Isolating bacteria and fungi**. 4) **Staining**. vol. II: 1) **Microbial motility**. 2) **Bacterial spores**. 3) **Rumen microbes**. 51 min. Music by J. Sagan and S. Godin. Jones and Bartlett Publishers.
- Haselton, A. and L. Margulis. Kombucha: **The "mushroom" tea**. 3 minutes
- Margulis, L. **Biominalization: Heinz Lowenstam**. 13 minutes.
2000. Wier, A. and L. Margulis. Microcosmos Videos. vol. I. **Cells and reproduction**. 1) **Cell motility**. 2) **Mitosis**. 3) **Sex or reproduction?** vol. II. **Evolution and diversity**. 1) **Five kinds of life**. 2) **Nitrogen fixation, Azolla-Anabaena symbiosis**. 3) **Green animals**. 4) **Why "Protoctista"?**, With booklet. Jones and Bartlett Publishers, Sudbury, MA.
- Margulis, L., T. Guillemette and T. Teal. **Chromidia: Propagules of protists**. 7 minutes.
- Margulis, L., L. Olendzenski and J. Jorgensen. **Who's eating the wood?** 9 minutes. 2001.
2001. Margulis, L. and L. Olendzenski. **Forams: Living and fossil protists**. NeoSci, Rochester, NY.
- Margulis, L., M. J. Chapman, J. Benson and T. Sagan. **Gunnera: Plant-cyanobacterial symbioses**. 6 minutes.
- Sagan, T., Benson, J. and L. Margulis. **Nematocyst thieves**. 5 minutes.
2002. Margulis, L., M. Dolan and A. Wier. **Staurojoenina: Hypermastigote from Neotermes**. 8 minutes.
- Margulis, L. and M. Dolan. **Calonymphids: Multinucleate trichomonads**. 8 minutes.
2003. Margulis, L. **Eukaryosis: Origin of eukaryotic cells**. 17 minutes.
2004. Margulis, L. and D. Mollenhauer. **Forbidden fertilization**. 8 minutes.
2005. Margulis, L. and J. MacAllister. **Lair of the green Stentor**. 20 minutes.
- Margulis, L. **Mixotricha paradoxa**. 10 minutes.
2009. **Homage to Darwin: Debate on evolutionary innovation** with Professors S. Bell, M. Brasier, R. Dawkins, L. Margulis and chaired by D. Noble. Produced by Voic of Oxford. Balliol College, Oxford University, UK.

## POSTERS:

1992. **Five Kingdoms**. (Drawings by Christie Lyons based on design by Dorion Sagan.) Ward's Natural Science Establishment, Rochester, NY.
- A Carbon Cycle**. (Designed by Richard Pace). Ward's Natural Science Establishment, Rochester, NY.
2000. **What Are Forams?** (Designed by K. Rainis and L. Brynes) NeoSci, Rochester, NY.
2003. **Microscopy, Earth History, and Clasts**. (Designed by L. Brynes, A. MacConnell, L. Margulis, and M. Partee) NeoSci, Rochester, NY

## SLIDE SETS - 35mm:

1987. Margulis, L. and K. V. Schwartz. **Life on Earth: The five kingdoms**. [Introduction, Monera, Fungi, Plants]. Ward's Natural Science Establishment, Rochester, NY.
1988. Margulis, L. and K. V. Schwartz. **Life on Earth: The five kingdoms**. [Protoctista, Animals]. Ward's Natural Science Establishment, Rochester, NY.

## INTERACTIVE LECTURE AUDIOTAPES (IAL) AND DIGITAL INTERACTIVE LECTURES (DIAL):

1973. **Symbiotic theory of the origin of plant and animal cells**. Polaroid Corporation, Cambridge, MA. (electrowriter)

- The Gaia hypothesis and the history of the Earth's atmosphere** with J. E. Lovelock.. Boston University, Boston, MA. (slides) 1980
1980. **Genetic basis of evolution.** Polaroid Corporation, Cambridge, MA. (electrowriter)
1985. **Spirochetes and the origin of undulipodia.** Boston University, Boston, MA. (slides)
- The Symbiotic theory: Cells as microbial communities.** Boston University, Boston, MA. (slides) 2005.
2005. **Symbiosis and eukaryosis.** University of Massachusetts, Amherst MA (DVD).
- Gaia and the origin of nucleated cells.** University of Massachusetts, Amherst MA (DVD).

## CD-ROMS:

1996. Margulis, L., H. I. McKhann and L. Olendzenski. **Protoctist Glossary. An illustrated reference guide to terms and taxa.** Biodiversity Center of ETI, Multimedia Interactive Software. Amsterdam, The Netherlands.
- Margulis, L. and K.V. Schwartz. **Five Kingdoms. A multimedia guide to the phyla of life on Earth.** Biodiversity Center of ETI, Multimedia Interactive Software. Amsterdam, The Netherlands.
2002. Margulis, L. and K.V. Schwartz. **Five Kingdoms. A multimedia guide to the phyla of life on Earth, 2<sup>nd</sup> edition.** Biodiversity Center of ETI, Multimedia Interactive Software. Amsterdam, The Netherlands.
2006. McHarg, I. **The Lost Tapes of Ian McHarg, Collaboration with Nature, Ecological Planning Lecture.** L. Margulis, A. MacConnell, and J. MacAllister, eds. Chelsea Green Publishing, VT.

## BOOKLETS/TEACHING UNITS:

1977. Committee on Planetary Biology and Chemical Evolution, Space Science Board, Assembly of Mathematical and Physical Sciences, National Research Council. [P. Mazur, E. S. Barghoorn, C. D. Cox, H. O. Halvorson, T. H. Jukes, I. R. Kaplan and L. Margulis]. **Post-Viking Biological Investigation of Mars.** National Academy of Sciences, Washington, DC. ix + 26 pp.
1978. Committee on Planetary Biology and Chemical Evolution, Space Science Board, Assembly of Mathematical and Physical Sciences. [P. Mazur, E. S. Barghoorn, H. O. Halvorson, T. H. Jukes, I. R. Kaplan and L. Margulis]. **Recommendations on Quarantine Policy for Mars, Jupiter, Saturn, Uranus, Neptune and Titan.** National Academy of Sciences, Washington, DC. xii + 70 pp.
1980. Committee on Planetary Biology and Chemical Evolution, Space Science Board, Assembly of Mathematical and Physical Sciences. [L. Margulis, E. S. Barghoorn, R. Burris, H. O. Halvorson, K. H. Nealson, J. Oró, L. Thomas, J. C. G. Walker and G. M. Woodwell]. **Origin and Evolution of Life—Implications for the Planets: A Scientific Strategy for the 1980's.** National Academy of Sciences, Washington, DC. x + 80 pp.
1985. Margulis, L. **Sharing with Children: New Ideas on the evolution of life.** [Catherine Molony Memorial Lecture]. City College Workshop Center, New York, NY, 23 pp.
1992. Armstrong, L. and L. Margulis. **Teacher's Guide to the five kingdom Poster.** Guide to classroom activities. Ward's Natural Science Establishment, Rochester, NY.
- Margulis, L., et al. **What Happens to Trash and Garbage? An Introduction to the Carbon Cycle.** Teacher's guide for junior high school science. Ward's Natural Science Establishment, Rochester, NY. 44 pp. NeoSci, Rochester, NY. 2<sup>nd</sup> edition.
- Margulis, L. and L. Olendzenski. **What Happens to Trash and Garbage? An Introduction to the Carbon Cycle.** Guide to the carbon cycle poster. Ward's Natural Science Establishment, Rochester, NY.; 2<sup>nd</sup> edition. NeoSci, 2001.
1996. Margulis, L. and D. Sagan. **Gaia to Microcosm.** Guide to four videos of microscopic life for the science classroom and beyond. Kendall-Hunt Publishing Co., Dubuque, IA.
1998. Margulis, L., E. Davis and D. Sagan. **Looking at Microbes: The microbiology laboratory for students.** Instructor's guide to video. Jones and Bartlett Publishers, Sudbury, MA. 28 pp.
2001. Margulis, L. and L. Brynes. **Living sands: Mapping time and space with forams.** Teacher's guide, student workbook, video. NeoSci, Rochester, NY.
2003. Margulis, L. **Biosphere Technologies and the Myth of Individuality.** Session five in The Future of Human Nature: A symposium on the promises and challenges of revolutions in genomics and computer sciences. The Pardee Center Conference Series, Spring 2003. Boston University.
2004. Case, E. and L. Margulis. **The micrcosmos poster teacher's guide: Microscopy, Earth history, geology.** NeoSci, Rochester, NY.

**Amherst Conservation Land: Local tree and shrub guide.** Drawings by Christie Lyons. [E. Case, J. Benson, S. Vickers, and L. Margulis] University of Massachusetts Graduate School.

Booklets and Teaching Units in preparation or press

Margulis, L. and E. Case. Peas and particles: Estimating large numbers to understand natural selection.

REVIEWS:

1972. Margulis, L. Review of **Molecular evolution 1: Chemical evolution and the origin of life**. R. Buvet and C. Ponnampereuma, eds. Review of Palaeobotany and Palynology pp. 256-258.
- Margulis, L. Review of **Papers on genetics: A book of readings**. L. Levine. American Scientist 60: 380.
1973. Margulis, L. Review of **The life puzzle: On crystals and organisms and on the possibility of a crystal as an ancestor**. G. Cairns-Smith. Space Life Sciences 4: 516-517.
- Margulis, L. Review of **Structure and function of chloroplasts**. M. Gibbs, ed. Transactions of the American Microscopical Society 92: 333-334.
1974. Margulis, L. Review of **The modern concept of nature: Essays on theoretical biology**. H. J. Muller. Journal of the History of Biology 7: 344-345.
- Margulis, L. Review of **Molecular evolution and the origin of life**. S. Fox and K. Dose. American Scientist 62: 241-242.
- Margulis, L. Review of **Origin and development of living systems**. J. Brooks and G. Shaw. Quarterly Review of Biology 49: 55.
- Margulis, L. Review of **Readings in genetics and evolution: A selection of Oxford biology readers**. Multi-authored; foreword by J. J. Head. Journal of College Science Teaching 3: 296.
- Margulis, L. Review of **Theory and experiment in Exobiology**, vol. 2, A. W. Schwartz, ed. Quarterly Review of Biology 49: 55-56.
1975. Margulis, L. Review of **Ecotopia: The notebooks and reports of William Weston. E. Callenbach**. CoEvolution Quarterly, Fall, p.112.
- Margulis, L. Reviews of **Interstellar communication: Scientific perspectives**. C. Ponnampereuma and A. G. W. Cameron; and **Communication with Extraterrestrial Intelligence (CETI)**. C. Sagan, ed. Quarterly Review of Biology 50: 120-121.
- Margulis, L. Review of **The Origin of life and evolutionary biochemistry**. K. Dose, S. W. Fox, G. A. Deborin and T. E. Pavlovskaya, eds. Origins of Life 6: 452-454.
1976. Margulis, L. Review of **Biology of the blue green algae**. G. E. Fogg, W. P. D. Stewart, P. Fay and A. E. Walsby. Icarus, 27: 181-182.
- Margulis, L. Review of **The evolution of the bioenergetic processes**. E. Broda. Science 192: 249.
1977. Margulis, L. Algal genetics. Review of **The genetics of algae**. R. A. Lewin, ed. Nature, 267: 83.
- Margulis, L. Reviews of **Paleobiogeography**, C. A. Ross, ed. and **Structure and classification of paleocommunities**. R. W. Scott and R. R. West, eds. Origins of Life 8: 178-179.
1978. Margulis, L. Reviews of **Biology of the cell: An evolutionary approach**. W. de Witt; and **Biology of the Cell: Laboratory explorations**. W. de Witt and E. R. Brown. American Scientist 66: 234-235.
- Margulis, L. Sex and development in mitochondria and chloroplasts. Review of **Genetics and biogenesis of chloroplasts and mitochondria**. T. H. Bücher, W. Neupert, W. Sebald and S. Werner, eds. Evolution 32: 218-219.
- Margulis, L. Review of **The Origin and Early Evolution of Animals**. E. D. Hanson. Journal of Protozoology 25: 252.
1979. Margulis, L. Genesis: On Earth or in outer space? Reviews of **Lifecloud: The origin of life in the universe**. F. Hoyle and N. C. Wickramasinghe; and **Genesis on planet Earth, the search for life's beginning**. W. Day. Chemical and Engineering News 57: 29-33.
- Margulis, L. Review of **Working it out**, S. Ruddick and P. Daniels, eds. The Sciences 19: 28.
1980. Margulis, L. Review of **The eighth day of creation: The makers of the revolution in biology**. H. F. Judson. CoEvolution Quarterly 25: 42-43.
- Rambler, M. and L. Margulis. Review of **Genesis on planet Earth: The search for life's beginnings**. W. Day. Origins of Life 10: 309-310.
1981. Margulis, L. Review of **Gaia**, J. E. Lovelock. Origins of Life, 11: 267-268.
1982. Margulis, L. Review of **On the origins of chloroplasts**. J. A. Schiff, ed. American Scientist 70: 541.
1983. Margulis, L. Review of **Aquatic and terrestrial humic materials**. R. F. Christman and E. T. Gjessing. Geochimica et Cosmochimica Acta, 47: 2064.

- Margulis, L. Review of **Cosmochemistry and the origins of life**. C. Ponnampereuma, ed. *Origins of Life* 13: 165-166.
- Margulis, L. Review of **The material basis of evolution**. R. Goldschmidt. *Journal of College Science Teaching* 12: 233, 240.
1984. Margulis, L. Chemical evolution broadly conceived. Review of **Aspects of chemical evolution: XVIIth Solvay Conference on Chemistry**. G. Nichols, ed. *Geochimica et Cosmochimica Acta* 48: 2773-2774.
- Margulis, L. The fate of the Earth. Review of **The coevolution of climate and life**. S. Schneider and R. Londer. *Science* 84: 90-93.
- Margulis, L. Review of **Earth's earliest biosphere: Its origin and evolution**. J. W. Schopf, ed. *Geology* 12: 511.
- Margulis, L. Way, way back. Review of **Earth's Earliest Biosphere: Its origin and evolution**. J. W. Schopf, ed. *Times Literary Supplement*, August, 10: 903.
- Margulis, L. Review of **Earth's earliest biosphere: Its origin and evolution**. J. W. Schopf, ed. *ISSOL* 12: 2.
- Margulis, L. Review of **Molecular evolution and protobiology**. K. Matsuno, K. Dose, K. Harada and D. L. Rohlfling, eds. *Geology* 12: 639.
1985. Margulis, L. Review of **A sceptics guide to the origin of life on Earth**. R. Shapiro. *Origins of Life and Evolution of the Biosphere* 16: 172-173.
- Margulis, L. The living Earth from space. Review of **Gaia: An atlas of planetary management**. N. Myers, ed. *BioScience* 35: 447-448.
- Margulis, L. The ultimate intimacy. Review of **Intracellular symbiosis**. K. Jeon, ed. *BioScience* 35: 455-456.
1986. Margulis, L. Review of **Evolution of Prokaryotes**. K. H. Schleifer and E. Stackebrandt, eds. *Quarterly Review of Biology* 61: 406-407.
- Margulis, L. Extrapolations: From mutation to evolution. Review of **Microorganisms as model systems for studying evolution**. R. P. Mortlock, ed. *BioScience* 36: 274-275.
1987. Margulis, L. The importance of being affectionate. Review of **The Health of Nations: True causes of sickness and well-being**. L. A. Sagan. *New York Times Book Review* 29: 9.
1988. Margulis, L. Evolution of genes and organisms. Review of **Four billion years: An essay on the evolution of genes and organisms**. W. Loomis. *New Scientist* 119: 67.
- Margulis, L. Review of **Genetic takeover and the mineral origins of life**. A. G. Cairns-Smith. *Geology* 16: 479.
- Margulis, L. Review of **Hydrothermal Vents of the Eastern Pacific: An overview**. M. L. Jones. *American Scientist* 76: 79.
1989. Margulis, L. Review of **Evolution without Selection: Form and Function by Autoevolution**. A. Lima-de-Faria. *BioSystems* 23: 87-88.
1990. Margulis, L. and E. Dobb. Untimely requiem. Review of **The end of nature**. B. McKibben. *The Sciences* 30: 44-49.
- Margulis, L. Review of **Microbial mats: Physiological ecology of benthic microbial communities**. Y. Cohen and E. Rosenberg, eds. *American Scientist* 78: 566-569.
1991. Margulis, L. Review of *Where the Truth Lies: Franz Moewus and the Origins of Molecular Biology*. J. Sapp. *American Scientist* 79: 377.
1992. Margulis, L. Review of **Major Events in the history of life**. J. W. Schopf, ed. *Origins of Life and Evolution of the Biosphere* 22: 390.
- Margulis, L. Save nature, save ourselves. Review of **Diversity of life**. E. O. Wilson. *The Boston Sunday Globe* Sept. 20. pp. B40; B43.
- Margulis, L. Protoctists and polyphyly: Comment on **The number of symbiotic origins of organelles**. T. Cavalier-Smith. *BioSystems* 28: 107-108.
1993. Margulis, L. Cells First. Review of **Beginnings of cellular life: Metabolism recapitulates biogenesis**. H.J. Morowitz. *BioScience* 43: 638-639.
- Margulis, L. Review of **The Proterozoic biosphere: A multidisciplinary study**. Schopf, W.J. and Klein, C., eds. *Quarterly Review of Biology* 68: 572-573.
1994. Margulis, L. Review of **How the Leopard got his spots**. B. Goodwin. *The Times (London) Higher Education Supplement*. Dec. 23, p. 20.
1995. Margulis, L. Invisible empire. Review of **Unseen Power: How microbes rule the world**. B. Dixon. *The Sciences* 35: 41-45.
1997. Margulis, L. Grandeur in the saga of the rocks. Review of **Life: An unauthorized biography: A natural history of the first 4,000,000,000 years of life on Earth**. P. Fortey. *The Times (London) Higher Education Supplement*, Oct. 3, p. 23.

- Margulis, L. Review of **Beliefs and biology: Theories of life and living**. J. B. Trusted. *ISIS* 88: 3: 522-523.
1998. Margulis, L. Review of **Life at small scale: The behavior of microbes**. D. B. Dusenbery. *ASM News* 64: 5:296.
- Margulis, L. The pox that scars Eden. Review of **Life in the Balance: Humanity and the biodiversity crisis**. N. Eldredge. *The Times Higher Education Supplement*, May 22, p. 21.
- Margulis, L. Perfection in grenade throwing. Review of **Darwin among the machines**. G. Dyson. *The Times Higher Education Supplement*, August 14, p. 18.
- Margulis, L. Pre-Palaeozoic sunbathers. Review of **The garden of Ediacara: Discovering the first complex life**. M. A. S. McMenamin. *The Times Higher Education Supplement*, October 30, p. 25.
- Margulis, L. Review of **Genetics and the manipulation of life**. C. Holdrege. *Whole Earth*. Summer, p. 42.
- Margulis, L. A flashy feast of loose change. Review of **Evolution: Society, science and the universe**. A.C. Fabian, ed. *The Times Higher Education Supplement*, April 17, p. 22.
1999. Margulis, L. Still confident of being surprised. Review of **What remains to be discovered**. J. Maddox. *The Times Higher Education Supplement*, February 5, p. 22.
- Margulis, L. Review of **The deep hot biosphere**. T. Gold. *Physics Today*, August, p. 65.
- Margulis, L. Review of **Our cosmic origins: From the big bang to the emergence of life and intelligence**. A. Delsemme. *The Quarterly Review of Biology* 74:34.
- Margulis, L. Microscopic manoeuvres. Review of **The birth of the cell. H. Harris and Joseph Leidy: The last man who knew everything**. L. Warren. *The Times Higher Education Supplement*, April 16, p. 22.
- Margulis, L. Review of **Darwin Among the Machines: The evolution of global intelligence**. G. B. Dyson. *Internatl Microbiol* 2: 57-58.
- Margulis, L. Review of **J. D. Bernal: A life in science and politics**. B. Swann and F. Aprahamian, eds. *Internatl. Microbiol* 2: 281-282.
2000. Margulis, L. Review of **J. D. Bernal: A life in science and politics**. B. Swann and F. Aprahamian, eds. *Science, Technology & Human Value*, Spring, 25: 252-253.
- Margulis, L. and D. Sagan. Exercises in eternal delight. Review of **The energy of life**. G. Brown. *The Times Higher Education Supplement*, April 14, p. 30.
- Margulis, L. Reviews of **Sacred Depths of Nature**. U. Goodenough (and) Almost Like a Whale. S. Jones. *The Times Higher Education Supplement*, October 27, p. 35.
2001. Margulis, L. Life from smut. Review of **Sparks of Life: Darwinism and the Victorian debates over spontaneous generation**. James E. Strick. *Science* 291: 991-992.
- Margulis, L. and D. Sagan. Searching for causes and codes of complexity that allow squirrels to fly to the 'adjacent possible'. Review of **Investigations. S. Kauffman and Cosmic Evolution: The rise of complexity in nature**. E. J. Chaisson. *The Times Higher Education Supplement*, November 9, pp. 22-23.
- Margulis, L. Victims were spotted living close to tiny ticks in urban margins. Review of **The Biography of a Germ**. Arno Karlen. *Times Higher Education Supplement*, February 16, pp. 26-27.
2002. Margulis, L. A scientific truth that is set in stone. Review of **What evolution is**. Ernst Mayr. *The Times Higher Education Supplement*, March 8, p. 28.
- Margulis, L. Odd, colourful organisms often confused with plants. Review of **Lichens of North America**. I. M. Brodo, S. D. Sharnoff and S. Sharnoff. *Times Higher Education Supplement*, September 16, 795.
- Margulis, L. Frank Ryan: Tuberculosis: The greatest story never told. Review of **Tuberculosis: The greatest story never told**. F. Ryan. *International Microbiology* 5: 151-152.
2003. Margulis, L. Microbial actors in the evolutionary drama. Review of **Liaisons of Life: From hornworts to hippos, how the unassuming microbe has driven evolution**. T. Wakeford. *American Institute of Biological Sciences*. 53: 179-180.
- Margulis, L. Review of **Lichens of North America**. I. M. Brodo, S. D. Sharnoff and S. Sharnoff. *International Microbiology* 6: 149-150.
- Margulis, L. Hard life giving you the hump? Review of **Life at the limits: Organisms in extreme environments**. D. A. Wharton. *Times Higher Education Supplement*, July 25, p. 29.
- Margulis, L. Looking at lichens. Review of **Lichens of North America**. I. M. Brodo, S. D. Sharnoff and S. Sharnoff. *BioScience* 53: 776-778.
- Sagan, D. and L. Margulis. God's recipes give food for thought but life still grips to secrets. Review of **The emergence of everything: How the world became complex**. H. J. Morowitz. *Times Higher Education Supplement*, October 24, p. 26-27. 2004.



2004. Margulis, L. Leaders prone to bouts of insanity. Review of **Pox: Genius, madness and the mysteries of syphilis**. D. Hayden. Times Higher Education Supplement, January 2, p.26.
- Margulis, L. Rich feast on stony ground. **Life on a young planet**. A. Knoll. Times Higher Education Supplement, March 5, p. 26.
- Margulis, L. Genetics & evolution. Review of **Origin and early evolution of life**. T. Fenchel. The Quarterly Review of Biology 206-207.
2007. Margulis, L. Old life, new spin. Review of **The third domain: The untold story of Archaea and the future of biotechnology**. T. Friend. The New Scientist 195: 50.
2008. Margulis, L. Review of **Origin of mitochondria and hydrogenosomes**. W. F. Martin and M. Müller, eds. Foreword by M. Embley, Springer-Verlag Berlin Heidelberg New York (2007) ix+306 pp. History of Philosophy of the Life Sciences, Stazione Zoologica Anton Dohrn, M. Maja ed. vol. 30, Napoli, Italy, pp. 473-477.
2010. Margulis, L. Two hit, three down - The biggest lie. Review of **The mysterious collapse of World Trade Center 7: Why the final official report about 9/11 is unscientific and false**. Rock Creek Free Press, Washington D. C. 4(2): 6.

STUDENT THESES<sup>1</sup>:

1969. Van Wie, C. C. An electron microscopic investigation of the intact and shed membranellar bands of *Stentor coeruleus*. Master of Arts. Boston University.
1976. Harwood, C. S. Isolation and characterization of *Maremonas rubrum*, gen. et sp. nov.; a red marine bacterium. Master of Arts. Boston University.
- Kelleher, J. K. Interaction of anti-microtubule agents with tubulin *in vitro* and in *Stentor coeruleus*. Doctor of Philosophy. Boston University.
1977. Cooper, G. J. Microtubule protein polymerization inhibitors and uptake and migration of symbiotic algae in *Hydra viridis*. Master of Arts. Boston University.
1978. Dyer, B. D. *Reticulitermes flavipes* hind gut ecosystem: Flagellate niches analyzed by selective defaunation. Master of Arts. Boston University.
- Giusto, J. P. Chromosomal mechanisms in catarrhine evolution. Master of Arts. Boston University.
- To, L. P. Ultrastructural and biochemical characterization of the hindgut microbiota of dry wood termites. Doctor of Philosophy. Boston University.
1979. Fracek, S. P., Jr. Colchicine, nocodazole and trifluralin: Different effects of microtubule polymerization inhibitors on the uptake and migration of endosymbiotic algae in *Hydra viridis*. Master of Science. Boston University.
- Giovannoni, S. J. A strain of red *Beneckea* from cyanobacterial mats of Laguna Mormona, Baja California. Master of Arts. Boston University.
1980. Rambler, M. B. Ultraviolet irradiation of bacteria under anaerobic conditions: Implications for Prephanerozoic evolution. Doctor of Philosophy. Boston University.
- Thorington, G. U. The algal and bacterial symbionts of *Hydra viridis*: Metabolic relations and transmission through the host sexual cycle. Doctor of Philosophy. Boston University.
1982. Gong-Collins, E. J. Isolation and characterization of a new strain of *Bacillus megaterium* and a new species of *Pseudomonas* from the microbial mats at Laguna Figueroa, Baja California del Norte Mexico. Master of Arts. Boston University. (Published: Gong-Collins, E. and D. L. Read, 1985, A new strain of *Arthrobacter* isolated from a laminated microbial mat, **Microbios** 42:45-57; Gong-Collins, E., 1986, A euryhalic, manganese- and iron-oxidizing *Bacillus megaterium* from a microbial mat at Laguna Figueroa, Baja California, Mexico, **Microbios** 48:109-126.)<sup>2</sup>
1983. Sharifi, E. Was the legume-*Rhizobium* symbiosis originally parasitic? A review. Master of Arts. Boston University. (Published: Sharifi, E., 1984, Parasitic origins of nitrogen-fixing *Rhizobium*-legume symbioses: A review of the evidence). **BioSystems** 16:269-289.
1984. Brown, S. W. Organisms which persist in desiccated microbial mat from the Laguna Figueroa, Baja California, Mexico. Master of Arts. Boston University. (Published: Brown, S., L. Margulis, S. Ibarra and D. Siqueiros, 1985, Desiccation resistance and contamination as mechanisms of Gaia, **BioSystems** 17:337-360.)
- Dyer, B. D. Protoctists from the microbial communities of Baja California, Mexico. Doctor of Philosophy. Boston

<sup>1</sup> First reader and major professor unless noted otherwise.

<sup>2</sup> Publications listed only if L. M. contributed significantly to their preparation but declined co-authorship.

- University.
- Fracek, S. P., Jr. Tubulin-like proteins of *Spirochaeta bajacaliforniensis*, a new species from a microbial mat community at Laguna Figueroa, Baja California del Norte, Mexico. Doctor of Philosophy. Boston University. (Published: Fracek, S. P., Jr. and J. F. Stolz, 1985, *Spirochaeta bajacaliforniensis* sp. n. from a microbial mat community at Laguna Figueroa, Baja California Norte, Mexico, **Archives of Microbiology** 142:317-325.)
- Mehos, D. C. Symbioticism as a biological principle: Ivan Wallin's theory of organic evolution. Master of Arts (History Department). Boston University. (second reader)
- Stolz, J. F. The effects of catastrophic inundation, (1977-1983), on the composition and ultrastructure of a stratified microbial mat community, Laguna Figueroa, Baja California, Mexico. Doctor of Philosophy. Boston University.
1985. Obar, R. Purification of tubulin-like proteins from a spirochete. Doctor of Philosophy (Chemistry). Boston University. (second reader) (Published: Obar, R. and J. Green, 1985, Molecular archaeology of the mitochondrial genome, **Journal of Molecular Evolution** 22:243-251.)
1986. Moynihan, B. E. *Chlorella desiccata* sp. n.; a new *Chlorella* forming desiccation-resistant cysts. Master of Arts. Boston University.
1987. Bermudes, D. G. Distribution and immunocytochemical localization of tubulin-like proteins in spirochetes. Doctor of Philosophy. Boston University.
1988. Fleischaker, G. R. Autopoiesis: System logic and origins of life. Doctor of Philosophy (University Professors Program, philosophy of biology). Boston University.
1989. Stricker, J. A. Evidence for centrin- and tektin-like proteins in *Spirochaeta halophila*. Master of Arts. Boston University.
- Tzertzinis, G. Immunochemical characterization and partial amino acid sequence of tubulin-like protein from *Spirochaeta bajacaliforniensis*. Doctor of Philosophy. Boston University. (second reader)
1990. Enzien, M. V. Microbial mats: Early diagenesis and studies of live and fossil organisms. Doctor of Philosophy. Boston University.
- Kang, J. K. Cyanobacteria, algae and fungi of the Black Zone at Bailey Island, Maine: Composition, ecology and comments on cyanobacterial systematics. Master of Science. University of Massachusetts, Amherst. (Reader, committee member)
1991. Mas-Castellà, J. Acumulación de poli-b-hidroxialcanoatos por bacterias: Distribución en la naturaleza y biotecnología. Doctor of Philosophy. Universidad de Barcelona. (Reader and member of tribunal)
1992. Ashen, J. B. Ultrastructure of new microbial mat and termite spirochetes and the symbiotic origin of undulipodia. Master of Science. University of Massachusetts, Amherst.
- Hinkle, G. J. Symbiosis and organelle origins: Undulipodia and the origin of eukaryotes. Doctor of Philosophy. Boston University.
1993. Olendzenski, L. The cyst-forming ciliate *Pseudocohnilembus pusillus*: Growth and encystment in response to salinity, pH, desiccation and food depletion. Master of Science. University of Massachusetts, Amherst.
1995. Antequera, V. P. Analisis comparativo de la organización genómica de la familia Chromatiaceae. Revisión de la actual clasificación. Doctor of Philosophy. Autonomous University of Barcelona. (Reader, member of tribunal).
1996. Teal, T. H. Spirochetes and a new bicosoecid, *Acronema sippewissettensis*, from anoxic salt marsh habitats: Morphological studies. Master of Science. University of Massachusetts, Amherst.
1997. Kolnicki, R. Karyotypic fissioning and lemur evolution. Master of Science. University of Massachusetts, Amherst. (Second reader, member of committee)
1998. d'Ambrosio I Palau, U. Evolutionary and structural study of *Caduceia versatilis* sp. nov. ("Rubberneckia") and *Snyderella tabogae*: Parabasalids (amitochondriate protists) in the dry wood-eating termite *Cryptotermes cavifrons*. Master of Science. University of Massachusetts, Amherst.
1999. Dolan, M. Amitochondriate protists: Symbiotic trichomonads of dry-wood-eating termites. Doctor of Science. University of Massachusetts, Amherst.
- Jorgensen, J. Z. Isolation and cultivation of spore-forming filamentous bacteria from *Porcellio scaber*. Master of Science. University of Massachusetts, Amherst.
2000. Navarrete, Antoni. Caracterización ecofisiológica y bioquímica de los tapetes microbianos del delta del Ebro. Doctor of Biological Sciences. University of Barcelona, Spain. (Reader, member of tribunal).
2002. Melnitsky, Hannah. Termite hindgut symbionts: Clues to early eukaryotic evolution. Honors thesis, Bachelor of Science. University of Massachusetts, Amherst.
2003. Bateman, Kenneth. Master of Science. University of Massachusetts, Amherst. (Second reader, member of committee).
2004. Werle, S. F. The biology, ecology and cytogenetics of the genus *Axarus* (Diptera: Chironomidae) in the Connecticut

- River. Doctor of Science. University of Massachusetts, Amherst. (Reader and member of committee).
2007. Bybee, Joanna. Taxonomy of *Cryptocercus*, the wood-feeding cockroach. Honors thesis, Bachelor of Science. University of Massachusetts, Amherst.
2008. Stephens, E. Spirochete diversity and sulfide consumption from the Great Sippewissett Salt Marsh microbial mats, (Cape Cod, Massachusetts). Doctor of Sciences. University of Massachusetts, Amherst. (Reader and member of committee)
2009. Dunthorn, M. Bromeliad ciliates. Doctor of Sciences. University of Massachusetts, Amherst. (Second reader, member of committee).
- Scofield, B. A History and test of planetary weather forecasting. Doctor of Sciences. University of Massachusetts, Amherst.
- Galan, Ca. Protist symbionts of the earthworm intestine. Honors thesis, Bachelor of Science. University of Massachusetts, Amherst.
- Faulkner, S. Distribution, composition, and formation of Sahara Desert microbialites from the base of the Meski Plateau, outside Erfoud, Morocco. Master of Science, University of Massachusetts, Amherst.
- Santiago, M. I. *Paratetramitus jugosus*: Desiccation resistant chromidia and growth in low oxygen habitats. Master of Science, University of Massachusetts, Amherst.

#### Student Theses in progress

- McAllister, J. Evolution Geography: Communities through deep time and space" please stand up. Master of Science, University of Massachusetts, Amherst.
- Asikainen, C. Microbial activity better explains ferromanganese stromatolitic-like structures (FMSS) from lacustrine systems. Doctor of Sciences. University of Massachusetts, Amherst.
- Kolnicki, R. Chromosomal structural changes (KFT) correlate with origin of mammalian species and zoographical dispersal patterns in lemurs (Madagascar) and bats (worldwide). Doctor of Sciences. University of Massachusetts, Amherst.
- Santiago, M. I. A new desiccation resistant, chromidia-forming vahlkampfiid amoeba that grows in low oxygen in laboratory culture from a Puerto Rican microbial mat. Doctor of Sciences. University of Massachusetts, Amherst.
- Faulkner, S. *Grypania spiralis* fossils found world-wide are the remains of sulfide-oxidizing bacteria, not algae. Doctor of Sciences. University of Massachusetts, Amherst.