

CURRICULUM VITAE
LYNN MARGULIS*

PRESENT POSITION: Distinguished University Professor
Department of Geosciences
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CHILDREN: Dorion Sagan (b. 3-17-59); Jeremy Sagan (b. 10-27-60);
Zachary Margulis-Ohnuma (b. 12-22-67); Jennifer Margulis di Properzio (b. 7-28-69)

DATE OF BIRTH: March 5, 1938—Chicago, IL

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 Tepoztlán, 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- present. 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- present. 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, KY. 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-).
 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-), BioSystems (1979-1993), International Microbiology, (1998-).
 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 microbiènne).
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: Generación 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 Menéndez 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 vita)* (in Italian).
 Seville, Spain: Universidad Internacional Menéndez 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 biología molecular; Las comunidades bacterianas y los Protocista; 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 Cryptogamic 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 célula).
 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, Vísperas 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 Cientific de Barcelona. International Symposium: New Frontiers in microbial ecology and international activities of ASM (Symbiogenesis and Evolution).
 Madrid, Spain: Museum of Science Exhibits, Museue de la Ciencia. (El origen de las especies).
 Mallorca, Spain: (Symbiogenesis y celulas)
 Barcelona, Spain, Sex Evolution Debate, Museu de la Ciencia de la Fundacio “La Caixa” (Early Sex-orican 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: 30th 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: 30th 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).
- Monerrey, 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 16th 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 genomas 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, 100th 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 MacDonald 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 -)
 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.
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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.
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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.
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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. 2nd 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.; 2nd 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 micocosmos 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.

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

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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.
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- Margulis, L. The ultimate intimacy. Review of **Intracellular symbiosis**. K. Jeon, ed. *BioScience* 35: 455-456.
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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.
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- 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.
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- 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.
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- 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.
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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.

Reviews in preparation or press (None)

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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.
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- Giovannoni, S. J. A strain of red *Beneckea* from cyanobacterial mats of Laguna Mormona, Baja California. Master of Arts. Boston University.
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- 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.
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- 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.)
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- 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.)
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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-β-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.
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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.
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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.