

CURRICULUM VITAE

Edward Francis DeLong
Massachusetts Institute of Technology
Massachusetts Institute of Technology 48-427
Dept. of Civil and Environmental Engineering & Division of Biological Engineering
Cambridge, MA. 02139 USA
Phone 617-253-5271 email: delong@mit.edu

Education:

A. S., Biology, Santa Rosa Junior College, 1980
B. S., Bacteriology, University of California Davis, 1982
Ph. D., Marine Biology, Scripps Institute of Oceanography, 1986

Thesis title: Adaptations of deep-sea bacteria to the abyssal environment

Professional Experience:

2004- Professor, Massachusetts Institute of Technology
1998-2004 Senior Scientist V, Monterey Bay Aquarium Research Inst.
1997-2002 Science Dept. Chair, Monterey Bay Aquarium Research Inst.
1997-1999 Associate Scientist III, Monterey Bay Aquarium Research Inst.
1996-1998 Associate Professor, Ecology, Evolution Marine Biol. Dept., UCSB
1992-1996 Assistant Professor, Biology Dept., UC Santa Barbara
1989-1991 Assistant Scientist, Woods Hole Oceanographic Inst.
1987-1989 Post-doctoral Research Assoc., Indiana U., Bloomington, Indiana
1986-1987 Post-doctoral Fellow, Indiana U., Bloomington, Indiana
1984-1986 Teaching Assistant, Biology Dept., UC San Diego
1982-1986 Research Assistant, Scripps Inst. of Oceanography, UC San Diego
1981-1982 Research Assistant, University of California, Davis, Ca.

Professional interests: Physiology, biochemistry, ecology, and evolution of marine microbes. Marine biogeochemical cycles. Microbial evolution and ecology. Genomic analyses of microbial evolution, ecology and natural history. Systems biology of natural microbial populations.

Honors and Awards

Independent Study Award, Woods Hole Oceanographic Inst., September, 1989
Office of Naval Research, Young Investigator Award, March 1990
American Society for Microbiology, Young Investigator Travel Award, May 1990
DuPont Young Faculty Award, April 1993.
Honorary Professorship, University of Queensland, Brisbane, Australia, 1999-2002.
Adjunct Professor UC Santa Cruz, 1998-2003.
Elected Fellow in the American Academy of Microbiology, August 2000.
Courtesy Professor appointment in the Biology Dept., Stanford University, May 2002.
Apple Bioinformatics Cluster Award, June 2004
Moore Investigator in Marine Microbiology, August, 2004.
Elected Fellow in the American Academy of Arts and Science, May 2005.

Professional Affiliations:

American Society of Microbiology; AAAS; American Society of Limnology and Oceanography

Special Appointments and Professional Activity

Editorial Board member, Applied and Environmental Microbiology 1990-2005.

Editorial Board member, Marine Biotechnology, 1999 - 2002

Editorial Board member, Environmental Microbiology, 1999-2010

Invited participant, Workshop on "Transfer of the tools of biotechnology and molecular biology to the ocean sciences", September, 1988

Invited participant, Jan. 1991, Workshop molec methods in ecology, DOE, Monterey, CA

NSF Panel member, NSF Biological Oceanog. Review Panel, January, 1993

Committee member, National Research Council Ocean Studies Board Committee on Biological Diversity in Marine Systems

Marine Biological Diversity Workshop, May 23-26, 1994, Irvine, CA

DOE Panel member, Microbial Genome Initiative, Washington DC., July, 1994.

NSF Panel Member, LExEn Initiative, June 22, 1997

Scientific adviser, The Microbial Literacy Committee, Amer. Soc. Microbiol., Sept. 1997

Invited participant, NSF LexEn workshop, June 1998.

Invited participant, NRC/NAS Space Studies Board Workshop on the Size Limits of Very Small Microorganisms, October 1998, Washington DC.

Invited NSF delegate, SCAR meeting on Research planning for Lake Vostok, Sept. 1999

Instructor, Antarctic Course in Integrative Biology, McMurdo Sta. Antarctica, Jan 2000.

Invited participant, NSF Workshop on Marine Microbial Genomics, April 2000.

Member, Rev. Comm. West Cost & Polar Regions Underwater Research Cntr, July 2000

Convener, Ridge Theoretical Workshop on the Deep Subsurface Biosphere, July 2000.

Convener, ASM Colloquium on Biogeology, November, 2000.

Invited participant, NSF Workshop on White House OST interagency "Microbe Project"

Member, Advisory Committee, SETI Institute program on Life in the Universe.

Co-organizer, ASM Colloquium on Geobiology, Tuscon, AZ, Nov 2000

Chair, Microbial Ecology Div, ASM Annual Meeting Program Committee, 2000-2001.

Member, Scientific Advisory Board (Fachbeirat) for Max-Planck-Institut fur Marine Mikrobiologie 2002-2006.

Co-chair and organizer, ASM Colloquium on 'The Global Genome Question', 2002

Member, NRC Committee on Implementation of Deep Sea Observatories, 2002

Scientific adviser, Canadian Institute for Advanced Research Evolutionary Program, 2002-2007

Member, DOE/Joint Genome Institute Policy Board, 2003-

Member, DOE/Joint Genome Institute Scientific Advisory Committee, 2003-.

Editor, Environmental Microbiology

Colloquium on 'The Global Genome Question', 2002

Editor, Environmental Microbiology

Member, Board of Reviewing Editors, Science Magazine, 2005-present AAAS

Member, National Research Council Committee on Metagenomics, 2006

Chair, DOE-JGI Users Committee, 2005-2007

Member, CAMERA Scientific Advisory Board, 2006-present

Scientific field expeditions and cruises

1985, Palau Trench, Sulu Sea, Celebes Sea; RV Th. Washington, cruise scientist

1987, Sargasso Sea, RV Weatherbird I, cruise scientist

1988, Central North Pacific, RV Moana Wave, cruise scientist

1992, Oregon-Hawaii transect, RV Wecoma, cruise scientist and blue water diver
1993, Santa Barbara Channel , RV Gordon Sproul, cruise scientist
1993, Santa Barbara Channel, Delta submersible cruise, Chief scientist
1995, Drake Passage/Bransfield Straight, RV Polar Duke, cruise scientist
1995, Palmer Station Antarctica, Station Science Leader and field team leader
1996, Drake Passage/Bransfield Straight, RV Polar Duke, cruise scientist
1996, Palmer Station Antarctica, Station Science Leader and field team leader
2000, Instructor, Field course in Antarctic Biology, McMurdo Station, Antarctica

Publications

1. **DeLong**, E. F., L. Baumann, R. D. Bowditch, and P. Baumann. 1984. Evolutionary relationships of superoxide dismutases and glutamine synthetases from marine species of *Alteromonas*, *Oceanospirillum*, *Pseudomonas* and *Deleya*. Arch. Microbiol. 138: 170-178
2. **DeLong**, E. F. and A.A. Yayanos. 1985. Adaptation of the membrane lipids of a deep-sea bacterium to changes in hydrostatic pressure. Science 228:1101-1103.
3. **DeLong**, E. F. and A. A. Yayanos. 1986. Biochemical function and ecological significance of novel bacterial lipids in deep-sea procaryotes. Appl. Environ. Microbiol. 51: 730-737
4. **DeLong**, E. F., D. Steinhauer, A. Israel, and K. H. Nealson. 1987. Isolation of the lux genes from *Photobacterium leiognathi* and expression in *Escherichia coli*. Gene 54:203-210
5. Yayanos, A. A. and E. F. **DeLong**. 1987. Deep-sea bacterial fitness to environmental temperatures and pressures. In Current Perspectives in High Pressure Biology, H.W. Jannasch, R. E. Marquis, and A. M. Zimmerman, eds., pp.17-32, Academic Press, London.
6. **DeLong**, E. F. and A. A. Yayanos. 1987. Properties of the glucose transport system in some deep-sea bacteria. Appl. Environ. Microbiol. 53:527-532
7. Giovannoni, S. J., E. F. **DeLong**, G. J. Olsen and N. R. Pace. 1988. Phylogenetic group-specific oligodeoxynucleotide probes for identification of single microbial cells. J. Bacteriol. 170: 720-726
8. Turner, S., E. F. **DeLong**, S. J. Giovannoni, G.J. Olsen and N. R. Pace. 1989. Phylogenetic analysis of organisms and natural populations using ribosomal RNA sequences. In Microbial Mats; Ecological Physiology of Benthic Microbial Communities, Y. Cohen and E. Rosenberg, eds., Am. Soc. Microbiol., pp. 390-401
9. **DeLong** E.F., G. Wickham, and N. R. Pace. 1989. Phylogenetic stains: Ribosomal RNA-based probes for identification of single microbial cells. Science 243:1360-1363.
10. **DeLong** E. F., T. M. Schmidt and N. R. Pace. 1989. Analysis of single cells and oligotrophic picoplankton populations using 16S rRNA sequences, In Recent Advances in Microbial Ecology, T. Hattori, Y. Ishida, Y. Maruyama, R. Morita, and A. Uchida, eds., Japan Sci. Soc. Press, Tokyo, pp. 697-701
11. **DeLong** E. F. and J. Shah. 1990. Fluorescent ribosomal RNA probes for clinical application. Clin. Diagnos. 28:41-44
12. Giovannoni, S. J., T. M. Schmidt, E. F. **DeLong** and N. R. Pace. 1990. Tangential flow filtration and preliminary phylogenetic analysis of marine picoplankton. Appl. Environ. Microbiol. 56 :2572-2575

13. Schmidt, T. M., E. F. **DeLong** and N. R. Pace. 1991. Analysis of a marine picoplankton community by 16S rRNA gene cloning and sequencing. *J. Bacteriol.* 173: 4371-4378
14. Distel, D., E. F. **DeLong**, and J. W. Waterbury. 1991. Phylogenetic characterization and in situ localization of the bacterial symbionts of shipworms by using 16S rRNA sequence analysis and oligodeoxynucleotide probe hybridization. *Appl. Environ. Microbiol.* 57: 2376-2382
15. **DeLong** E. F. 1991. Molecular systematics, microbial ecology and single cell analysis. In *Single Cell and Particle Analysis in Oceanography*, S. Demerge, ed., NATO ASI Series, Springer-Verlag, Heidelberg, Vol. G27, pp. 237-257.
16. Schmidt, T. M., E. F. **DeLong** and N. R. Pace. 1991. Phylogenetic identification of uncultivated microorganisms in natural habitats. In *Rapid Methods and Automation in Microbiology and Immunology*, A. Vaheri, R. C. Tilton, A. Balows, eds., Springer-Verlag, Berlin, pp. 37-46.
17. **DeLong**, E. F. 1992. Aquatic habitats: High Pressure Environments, In Joshua Lederberg, ed, *Encyclopedia of Microbiology*, Academic Press, Vol. 2, pp 405-417.
18. **DeLong**, E. F. 1992. Archaea in coastal marine environments, *Proc. Natl. Acad. Sci. USA*, 89: 5685-5689.
19. **DeLong**, E. F. and B. B. Ward. 1992. Molecular approaches in biological oceanography. *Oceanus* 35:47-54.
20. **DeLong**, E. F., R. B. Frankel and Dennis A. Bazylinski. 1993. Multiple evolutionary origins of magnetotaxis in bacteria. *Science* 259:803-806
21. Lim, E. L., L. A. Amaral, D. A. Caron and E. F. **DeLong**. 1993. Application of ribosomal RNA-based probes for observing marine nanoplanktonic protists. *Appl. Environ. Microbiol.* 59:1647-1655
22. **DeLong**, E. F. 1993. Single cell identification using fluorescently labeled, ribosomal RNA specific probes. In *Handbook of Methods in Aquatic Microbial Ecology*, P. F. Kemp, B. F. Sherr, E. B. Sherr and J. J. Cole, eds, Lewis Pub., Ann Arbor, pp. 285 - 294.
23. **DeLong**, E. F., D. G. Franks and A. L. Alldredge. 1993. Phylogenetic diversity of aggregate-attached versus free-living marine bacterial assemblages. *Limnol. Oceanog.* 38 :924-934.
24. Pace, N. R., E. R. Angert, E. F. **DeLong**, T. M. Schmidt and G. S. Wickham. 1993. New perspectives on the natural microbial world, In *Genetics and molecular biology of industrial microorganisms-5*, Hegeman, G. (ed.), ASM Press, pp. 77-84.
25. Ledyard, K. M., E. F. **DeLong** and J. W. Dacey. 1993. Characterization of a DMSP-degrading bacterial isolate from the Sargasso Sea. *Arch. Microbiol.* 160: 312-318
26. DiChristina, T. J., and E. F. **DeLong**. 1993. Design and application of rRNA-targeted oligonucleotide probes for the dissimilatory iron- and manganese-reducing bacterium *Shewanella putrefaciens*. *Appl. Environ. Microbiol.* 59: 4152-4160
27. DiChristina, T. J., and E. F. **DeLong**. 1994 Isolation of anaerobic respiratory mutants of *Shewanella putrefaciens* and genetic analysis of mutants deficient in anaerobic growth on Fe³⁺, *J. Bacteriol.* 176:1468-1474.
28. **DeLong**, E.F. 1994. Antarctic Microbiology. *Science* 263: 401-402 (book review)
29. **DeLong**, E. F., K. Y. Wu, B. B. Prezelin and R. V. M. Jovine. 1994. High abundance of Archaea in Antarctic marine picoplankton. *Nature* 371: 695-697.

30. Butman, C.A., J. Carlton, G. W. Boehlert, S. H. Brawley, E. F. **DeLong**, J. F. Grassle, J. B. C. Jackson, S. L. Levin, A. R. M. Nowell, R. T. Paine, S. R. Palumbi, G. J. Veermeij, and L. Watling. 1995. *Understanding Marine Biodiversity*, National Academy Press
31. Brantley, S. E., T. F. Molinski, C. M. Preston, and E. F. **DeLong**. 1995. Brominated fatty acids from *Xestospongia* sp., a marine sponge-bacteria association. *Tetrahedron* 51: 7667-7672.
32. **DeLong**, E. F. 1995. Diversity of naturally-occurring prokaryotes: a beginning, In *Microbial diversity in Space and Time*, Plenum Press, pp. 125 - 133
33. Stein, J. , T. L. Marsh, K. Y. Wu, H. Shizuya, and E. F. **DeLong**. 1996. Characterization of uncultivated marine prokaryotes: isolation and analysis of a 40 kilobase genome fragment from a planktonic marine Crenarchaeote, *J. Bacteriol.*178: 591-599.
34. Lim, E. L, D. A. Caron and E. F. **DeLong**. 1996. Development and field application of a quantitative method for the examination of natural assemblages of protists using oligonucleotide probes, *Appl. Environ. Microbiol.* 62: 1416-1423
35. Preston, C. M., K. Y. Wu, T. F. Molinski, and E. F. **DeLong**. 1996. A psychrophilic crenarchaeon inhabits a marine sponge; *Cenarchaeum symbiosum*, gen. nov. sp. nov. *Proc. Natl. Acad. Sci. USA*, 93: 6241-6246.
36. Hovanec, T. A. and E. F. **DeLong**. 1996. Comparative analysis of nitrifying bacteria associated with freshwater and marine aquaria. *Appl. Environ. Microbiol.*, 62: 2888-2896.
37. Massana, R., A. E. Murray, K. Y. Wu, and E. F. **DeLong**. 1997. Vertical distribution and phylogenetic characterization of marine planktonic Archaea in the Santa Barbara Channel. *Appl. Environ. Microbiol.* 63: 50-56
38. **DeLong**, E. F. 1997. Marine microbial diversity: the tip of the iceberg. *Trends Biotechnol.*, 15:203-207
39. **DeLong**, E. F. D. G. Franks and A. A. Yayanos. 1997. Evolutionary relationships of cultivated psychrophilic and barophilic deep-sea bacteria. *Appl. Environ. Microbiol.* 63: 2105 - 2108
40. Schleper, C. Swanson, R. V., Mathur, E. J., and E. F. **DeLong**. 1997. Characterization of a DNA polymerase from the uncultivated psychrophilic archaeon *Cenarchaeum symbiosum*. *J. Bacteriol.* 179:7803-7811.
41. **DeLong**, E. F. 1997. Molecular phylogenetics: new perspective on the ecology, evolution, and biodiversity of marine organisms, In *Molecular Approaches in the Study of the Ocean*, K. Cooksey, ed., Chapman and Hall, pp. 1-27.
42. Hovanec, T. A., L. T. Taylor, A. Blakis, and E. F. **DeLong**. 1998. *Nitrospira*-like bacteria associated with nitrite oxidation in freshwater aquaria. *Appl. Environ. Microbiol.* 64:258-264
43. E. F. **DeLong**, L. L. King, R. Massana, H. Cittone, A. Murray, C. Schleper and S. G. Wakeham. 1998. Dibiphytanyl ether lipids in nonthermophilic crenarchaeotes. *Appl. Environ. Microbiol.* 64:1133-1138.
44. **DeLong**, E. F. 1998. Archaeal means and extremes. *Science* 280: 542-543.
45. Rath, J., K. Y. Wu, G. J. Herndl and E. F. **DeLong**. 1998. High phylogenetic diversity in a marine snow-associated bacterial assemblage. *Aquatic Microbial Ecology* 14: 261-269.
46. Murray, A. E., C. M. Preston, R. Massana, L. T. Taylor, A. Blakis, K. Y. Wu and E. F. **DeLong**. 1998. Seasonal and spatial variability of bacterial and archaeal assemblages in the coastal waters off Anvers Island, Antarctica. *Appl. Environ. Microbiol.* 64: 2585-2595.

47. Vergin, K. L., E. Urbach, J. L. Stein, E. F. **DeLong**, and S. J. Giovannoni. 1998. Screening of a fosmid library of marine environmental genomic DNA fragments reveals four clones related to the *Planctomycetales*. *Appl. Environ. Microbiol.* 64:3075-3078.
48. Massana, R., Taylor, T., Murray, A., Jeffrey, W., and E. F. **DeLong**. 1998. Distribution of marine planktonic archaea in the Gerlache Strait Antarctica during early Spring. *Limnol. and Oceanog.* 43: 607-617.
49. Schleper, C., Preston, C. M., Feldman, R. A., Ke Ying Wu, E. F. **DeLong**, and R. V. Swanson. 1998. Genomic analysis reveals chromosomal variation in natural populations of the uncultured psychrophilic archaeon *Cenarchaeum symbiosum*, *J. Bacteriol.* 180:5003-5009.
50. **DeLong** E. F. 1998. Novel niches. *Trends Microbiol.* 6: 416 (book review).
51. **DeLong**, E. F. 1998. Everything in moderation : Archaea as "nonextremophiles" *Curr. Opin. Genet. Develop.* 8:649-654.
52. Sandler, S. J., Hugenholtz, P., Schleper, C., **DeLong**, E. F. Pace, N. R., and A. J. Clark. 1999. Diversity of radA genes from cultured and uncultured Archaea: comparative analysis of their putative RadA proteins and their use as a phylogenetic marker. *J. Bacteriol.*, **181**:907-915.
53. **DeLong**, E. F. 1999. The planetary crucible : Bacterial biogeochemistry. *Trends Microbiol.* 7: 133-134. (book review).
54. **DeLong**, E. F. 1999. Diminutive cells in the oceans - unanswered questions, pp. 81-84, In *Size Limits of Very Small Microorganisms: Proceedings of a Workshop, Steering Group on Astrobiology of the Space Studies Board, National Research Council, 1999.*
55. K.-U. Hinrichs, J. M. Hayes, S. P. Sylva, P. G. Brewer, and E. F. **DeLong**, 1999. Methane-consuming archaea Molecular-isotopic and phylogenetic evidence, *Nature* **398**:802-805.
56. **DeLong**, E. F., Schleper, C., Feldman, R., and R. V. Swanson. 1999. Application of genomics for understanding the evolution of hyperthermophilic and nonthermophilic Crenarchaeota, *Biol. Bull.* **196**:363-366
57. A. E. Murray, K. Y. Wu, C.L. Moyer, D. M. Karl and E. F. **DeLong**. 1999. Evidence for circumpolar distribution of planktonic Archaea in the Southern Ocean. *Aquat. Microb. Ecol.* 18: 263-273.
58. Caron, DA; Lim, EL; Dennett, MR; Gast, RJ; Kosman, C; **DeLong**, EF. 1999. Molecular phylogenetic analysis of the heterotrophic Chrysophyte genus *Paraphysomonas* (Chrysophyceae), and the design of rRNA-targeted oligonucleotide probes for two species. *J. Phycol.*, 35:824-837.
59. **DeLong**, E.F., Taylor, L.T., Marsh, T. L. and C. M. Preston. 1999. Visualization and enumeration of marine planktonic archaea and bacteria using polyribonucleotide probes and fluorescence in situ hybridization. *Appl. Environ. Microbiol.* 65: 5554-5563.
60. Murray, A. E., Blakis, A., Massana, R., Strawzewski, S. Passow, U., Alldredge, A. and E. F. **DeLong**. 1999. A time series assessment of planktonic archaeal variability in the Santa Barbara Channel. *Aquat. Microb. Ecol.* 20: 129-145.
61. Suzuki, M. T. and E. F. **DeLong**. 2000. Marine prokaryote diversity, in *Biodiversity of microbial life: foundation of the Earth's Biosphere*, Staley, J. T. and Reysenbach, A.L., eds, J. Wiley and Sons, Inc., N.Y., N.Y., pp. 209-234.
62. Orphan, V. J., L. T. Taylor, D. Hafenbradl, and E. F. **DeLong**. 2000. Culture-dependent and -independent characterization of microbial assemblages associated with high temperature oil reservoirs. *Appl. Environ. Microbiol.* 66:700-711.

63. **DeLong**, E. F. 2000. A phylogenetic perspective on hyperthermophilic microorganisms, in *Hyperthermophilic Enzymes, Methods in Enzymology series*, Academic Press, 330:3-11.
64. Massana, R., E. F. **DeLong** and C. Pedros-Alios. 2000. A few cosmopolitan phylotypes dominate planktonic archaeal assemblages in widely different oceanic provinces. *Appl. Environ. Microbiol.* 66:1777-1787.
65. Bèjà, O., Suzuki, M. T., Koonin, E.V., Aravind, L., Hadd, A., Nguyen, L.P., Villacorta, R., Amjadi, M., Garrigues, C., Jovanovich, S.B., Feldman, R. and E. F. **DeLong**. 2000. Construction and analysis of Bacterial Artificial Chromosome libraries from a natural microbial assemblage, *Environ. Microbiol.*2:516-529.
66. Bèjà, O., L. Aravind, E. V. Koonin, M. T. Suzuki, A. Hadd, L. P. Nguyen, S. B. Jovanovich, C. Gates, R. A. Feldman, J. L. Spudich, E. N. Spudich, and E. F. **DeLong**. 2000. Bacterial rhodopsin: evidence for a new type of phototrophy in the sea. *Science* 289: 1902-1906.
67. **DeLong**, E. F. 2000. Resolving a methane mystery. *Nature* 407: 577-579.
68. Suzuki, M. T., L. T. Taylor, and E. F. **DeLong**. 2000. Quantitative analysis of small subunit ribosomal RNA genes in mixed microbial populations employing 5' nuclease assays, *Appl. Environ. Microbiol.* 66:4605-4614.
69. Dawson, S. C., **DeLong** E. F. and N. R. Pace. 2000. Phylogenetic and Ecological Perspectives on Uncultured Crenarchaeota and Korarchaeota. In *The Prokaryotes*, Springer Verlag, Electronic publication.
70. **DeLong**, E. F. 2000. Extreme genomes, *Genome Biology* 1:reviews1029.1-1029.3
71. Karner, M, E. F. **DeLong**, and D. M. Karl. 2001. Archaeal dominance in the mesopelagic zone of the Pacific Ocean. *Nature* 409:507-510.
72. Suzuki, M. T. , Preston, C. F. Chavez, and E. F. **DeLong**. 2001. Quantitative mapping of bacterioplankton populations in seawater: field tests across an upwelling plume in the Monterey Bay. *Aquat. Microb. Ecol.*, 24:117-127.
73. Orphan, V. J., K.-U., Hinrichs, W. Ussler III, C. K. Paull, L. T. Taylor, S. Sylva, J. M. Hayes and E. F. **DeLong**. 2001. Comparative analysis of methane-oxidizing archaea and sulfate-reducing bacteria in anoxic marine sediments. *Appl. Environ. Microbiol.* 67:1922-1927.
74. **DeLong**, E. F. 2001. Microbial seascapes revisited. *Curr. Op. Microbiol.* 4:290-295.
75. **DeLong**, E. F. and N. R. Pace. 2001. Environmental Diversity of Bacteria & Archaea, *Systematic Biol.* 50:1-9.
76. Suzuki, M. T., Bèjà, O., Taylor, L.T. and E. F. **DeLong**. 2001. Phylogenetic analysis of ribosomal RNA operons from uncultivated coastal marine bacterioplankton, *Environ. Microbiol.* 3:323-331.
77. Bèjà, O., E. N. Spudich, J. L. Spudich, M. LeClerc, and E. F. **DeLong**. 2001. Proteorhodopsin phototrophy in the ocean. *Nature* 411:786-789.
78. Orphan, V. J., C. House, K. U. Hinrichs, K. McKeegan, and E.F. **DeLong**. 2001. Methane-consuming archaea revealed by directly coupled isotopic and phylogenetic analysis. *Science* 293:484-487.
79. Bèjà O., E. V. Koonin, L. Aravind, L. T. Taylor, H. Seitz, J. L. Stein, D. C. Bensen, R. A. Feldman, R. V. Swanson, and E. F. **DeLong**. 2001. Comparative Genomic Analysis of Archaeal Genotypic Variants in a Single Population and in Two Different Oceanic Provinces. *Appl. Environ. Microbiol.* 68: 335-345.

80. C. O. Wirsen, S. M. Sievert, C. M. Cavanaugh, S. J. Molyneaux, A. Ahmad, L. T. Taylor, E. F. **DeLong**, and C. D. Taylor. 2002. Characterization of an Autotrophic Sulfide-Oxidizing Marine *Arcobacter* sp. That Produces Filamentous Sulfur. *Appl. Environ. Microbiol.* 68: 316–325
81. Béjà O., Suzuki, M. T., Heidelberg, J.F., Nelson, W.C., Preston, C.M., Hamada T., Eisen, J.A., Fraser, C., and E. F. **DeLong**. 2002. Unexpected diversity among marine aerobic anoxygenic phototrophs. *Nature* 415:630-633.
82. Pernthaler, A., C.M. Preston, J. Pernthaler, E. F. **DeLong**, and R. Amann. 2002. Comparison of fluorescently labeled oligonucleotide and polynucleotide probes for the detection of pelagic marine bacteria and archaea. *Appl. Environ. Microbiol.* 68:661-667.
83. **DeLong**, E. F. 2002. Towards microbial systems science: integrating microbial perspectives, from genomes to biomes. *Environ. Microbiol.* 4:9-10.
84. Victoria J. Orphan, Christopher H. House, Kai-Uwe Hinrichs, Kevin D. McKeegan and Edward F. **DeLong**. 2002. Multiple archaeal groups mediate methane oxidation in anoxic cold seep sediments, *Proc. Natl. Acad. Sci.* 99: 7663-7668.
85. **DeLong**, E. F. 2002. Mille milliards de mille microbes. *La Recherche* 355: 54-57.
86. **DeLong** E. F. and P. Chandler. 2002. Power from the sea. *Nature Biotech.* 20:788-789.
87. **DeLong** E. F. 2002. Microbial population genomics and ecology. *Curr. Op. Microbiol.* 5: 520-524
88. **DeLong**, E. F. 2002. Its all in the packaging. *Nature* 419, 676 – 677.
89. Zeidner, G. C. M. Preston, E. F. **DeLong**, R. Massana, A. F. Post., D. J. Scanlan, O. Béjà. 2003. Molecular diversity among marine picophytoplankton as revealed by *psbA* analyses. *Environ. Microbiol.* 5: 212–216
90. Orphan, V. J., J. Boles, S. K. Goffredi, and E. F. **DeLong**. 2002. Geochemical influence on microbial processes in high temperature oil reservoirs. *Geomicrobiol. J.* 20:1-17.
91. **DeLong**, E. F. 2003. A plentitude of microorganisms. *Natural History Magazine*, 112:40-46.
92. Sabehi, G., Ramon M., **DeLong** E. F. and O. Béjà. 2003. New Proteorhodopsin Variants from the Mediterranean and Red Seas, *Environ. Microbiol.* 5: 842–849
93. Girguis, P. R., V. Orphan And E. F. **DeLong**. 2003. Enrichment Of Anaerobic Methane Oxidizing Archaeal/Bacterial Consortia In Deep-Sea Marine Sediments. *Appl. Environ. Microbiol.* 69: 5472–5482
94. Hallam S. J., P. R. Girguis, C. M. Preston, P. M. Richardson, and E. F. **DeLong**. 2003. Identification of Methyl Coenzyme M Reductase A (*mcrA*) genes in Methane Oxidizing Archaea. *Appl. Environ. Microbiol.* 69: 5483–5491
95. de la Torre, J. R, Christianson, L.M., Béjà, O., Heidelberg, J., Karl D.M., and E. F. **DeLong**. 2003. Proteorhodopsin genes are distributed among divergent marine bacterial taxa.. *Proc. Natl. Acad. Sci. U.S.A.* 100:12830-12835.
96. Church, M.J., **DeLong**, E.F., Ducklow, H.W., Karner, M.B., Preston, C.M., and D. M. Karl. 2003. Abundance and distribution of planktonic Archaea and Bacteria in the Western Antarctic Peninsula. *Limnol. Oceanogr.* 48: 1893-1902.
97. **DeLong**, E. F. 2003. Oceans of archaea. *ASM News* 69:503-511.
98. **DeLong** E. F. 2004. Microbial population genomics and ecology: a new frontier. In *Microbial Genomics*, ed. C.M. Fraser, K. E. Nelson, T.D. Read, Human Press Inc., Totowa, N.J., pp 419-442.
99. **DeLong**, E. F., 2004. Reconstructing the wild types. *Nature* 428:25-26

100. Suzuki, M.T., Preston, C.M., B  j  , O., de la Torre, J., Steward, G., and **DeLong, E.F.** 2004. Phylogenetic Screening of Ribosomal RNA Gene-Containing Clones in Bacterial Artificial Chromosome (BAC) Libraries from Different Depths in Monterey Bay, *Microbial Ecology*, 48:473-488.
101. Cary, S.C., and Campbell, B.J., **DeLong, E.F.** 2004. Studying the Deep Subsurface biosphere: emerging technologies and applications. In *The Subseafloor Biosphere at Mid-Ocean Ridges*, Wilcock, W. W., DeLong, E. F., Kelley, D. S. and Cary, S. C., eds., AGU Press, Washington D. C. pg. 383-399.
102. Sabehi, G., B  j  , O., Suzuki, M.T., Preston, C.M. & E. F. **DeLong**. 2004. Different SAR86 subgroups harbour divergent proteorhodopsins, *Environ. Microbiol.* **6**:903-910.
103. **DeLong, E. F.** 2004. Microbial population genomics and ecology: the road ahead. *Environ. Microbiol.* **6**:875-878.
104. Hallam, S. J., Putnam, N., Preston, C.M., Detter, J.C., Richardson, P. M., Rokhsar, D., and E. F. **DeLong**. 2004. Reverse Methanogenesis: Testing the Hypothesis with Environmental Genomics, *Science*, 305: 1457-1462.
105. **DeLong, E. F.** 2004. Microbial life breathes deep. *Science* 306:2198-2200.
106. Schirmer A., Gadkari, R., Reeves, C. D., Ibrahim, F, **De Long, E. F.**, and Hutchinson, C. R. 2005. Metagenomic analysis reveals diverse polyketide synthase gene clusters in microorganisms associated with the marine sponge *Discodermia dissolute*, *Appl. Environ. Microbiol.* 71:4840-4849.
107. **DeLong, E. F.** 2005. Microbial community genomics in the ocean. *Nat Rev Microbiol.* 3:459-69.
108. Girguis P. R., A. Cozen and **E. F. DeLong**. 2005. Growth and population dynamics of anaerobic methane-oxidizing archaea and sulfate -reducing bacteria in a continuous flow bioreactor. *Appl. Environ. Microbiol.* 71:3725-3733.
109. Cubonov  ,L., Sandman, K., Hallam, S. J. **DeLong, E. F.** and J. N. Reeve. 2005 Histones in *Crenarchaea* *J. Bacteriol.* 187: 5482-5485.
110. **DeLong, E. F.** and D. M. Karl. 2005. Genomic perspectives in microbial oceanography. *Nature* 437: 336-342.
111. Frigaard, N.U, Martinez, C., Mincer, T., **E. F. DeLong**. 2006. Proteorhodopsin lateral gene transfer between marine planktonic *Bacteria* and *Archaea*. *Nature* 439:847-850.
112. **DeLong, E. F.**, Preston, C. M., Martinez, A., Mincer, T., Frigaard N.U., Rich V., Hallam S. J., Sullivan, M., Edwards, R., Beltran, R.B., Chisholm, S. W., and D. M. Karl 2006. Community genomics among stratified microbial assemblages in the ocean's interior. *Science*, 311: 496-503.
113. Grzymiski, J. J. Carter, B., **DeLong, E.F.** , Feldman, R. Ghadiri, A., and A. E. Murray. 2006. Comparative Genomics of DNA Fragments from Six Antarctic Marine Planktonic Bacteria *Appl. Environ. Microbiol* 72: 1532-1541
114. Hallam, S. J., Mincer, T., Roberts, K., Preston, C. M., Schleper, C., Detter, J. C., Richardson, P. M., and **E. F. DeLong**. 2006. Pathways of Carbon Assimilation and Ammonia Oxidation Suggested by Environmental Genomic Analyses of Marine Crenarchaeota. *PloS Biology*, 4(4): e95.
115. Coleman, M. L. Sullivan, M. B., Martiny , A. C., Steglich, C., Barry, K., **DeLong, E. F.**, and S. W. Chisholm. 2006. Genomic islands and the ecology and evolution of *Prochlorococcus*. *Science* 311: 768-770.

116. **DeLong, E. F.** 2006. Archaeal mysteries of the deep revealed. *Proc Natl Acad Sci U S A.* 103: 6417-6418.
117. Yoshinari S, Itoh T, Hallam SJ, **DeLong EF**, Yokobori S, Yamagishi A, Oshima T, Kita K, Watanabe Y. Archaeal pre-mRNA splicing: a connection to hetero-oligomeric splicing endonuclease. *Biochem Biophys Res Commun.* 346:1024-32.
118. Hallam, S. J., Konstantinidis, K. T., Putnam, N., Schleper, C., Watanabe, Y., Sugahara, J., Preston, C. M., de la Torre, J, Richardson, P.R. and **DeLong, E. F.** 2006. Genomic analysis of the uncultivated marine crenarchaeote, *Cenarchaeum symbiosum*. *Proc. Natl. Acad. Sci U.S.A.* 103:18296-18301
119. McCarren, J. and **E. F. DeLong.** 2007. Proteorhodopsin photosystem gene clusters exhibit co-evolutionary trends and shared ancestry among diverse marine microbial phyla. *Environ. Microbiol.* 9:846-858.
120. Mincer T. J., Church, M, J., Taylor, L. T., Preston, C. M., Karl, D. M., and **DeLong, E. F.** 2007. Quantitative distribution of presumptive archaeal and bacterial nitrifiers in Monterey Bay and the North Pacific Subtropical Gyre. *Environ. Microbiol.* 9:1162-1175.
121. A. Martinez, A. Bradley, J. Waldbauer, R. Summons and **E. F. DeLong.** 2007. Proteorhodopsin photosystem gene expression enables photophosphorylation in a heterologous host. *Proc. Natl Acad Sci.* 104: 5590-5595.
122. **DeLong, E. F.** 2007. Sea change for metagenomics ? *Nat Rev. Microbiol.* . 5: 326.
123. **DeLong, E. F.** 2007. Microbial domains in the ocean: A lesson from the Archaea, *Oceanography* 20:124-129
124. **E. F. DeLong.** 2007. Life on the thermodynamic edge. *Science* 317:327-328.
125. **E. F. DeLong.** 2007. Construction of BAC and fosmid libraries from naturally occurring microbial populations in Reddy and Schmidt ed., *Methods for General and Molecular Microbiology*, pp. 879-885, ASM Press, Washington D. C.
126. Giaquinto L, Curmi PM, Siddiqui KS, Poljak A, **DeLong E. F.**, Dassarma S, Cavicchioli R. 2007. Structure and function of cold shock proteins in archaea. *J Bacteriol.* 189:5738-5748.
127. Woebkena, D., Teeling, H., Weckerb, P, Dumitriuc, A., Kostadinovb, I., **DeLong, E. F.**, Amann, R. and F. O. Glöckner. 2007. Fosmids of novel marine Planctomycetes from the 1 Namibian and Oregon coast upwelling systems and their cross-comparison with one complete and four almost complete planctomycete genomes. *ISME J.*, in press.
128. J. P. Zehr, S. R. Bench, I E. A. Mondragon, J. McCarren and **E. F. DeLong.** 2007. Low genomic diversity in tropical oceanic N₂-fixing cyanobacteria, *Proc. Natl. Acad. Sci, U.S.A.*, In press.
129. J. Grzymiski, A. G Marsh, S. Liu¹, R. Dale, D. Miller, and E. F. DeLong. 2007. Protein languages in microbial genomes reveal the imprint of environmental evolution, submitted to *Science*.

Other Professional Activities

Invited speaker, San Diego State University, October, 1987

Invited speaker, University of California, Davis, April, 1988

Invited instructor, Grey Freshwater Biological Institute, "Application of molecular techniques to studies in microbial ecology", July, 1988

Invited speaker, Sept., 1989, 5th Int. Symp. in Microbial Ecol., Kyoto, Japan

Invited speaker, May 1989, Meeting of Soc. for Stain Technology, Louisville, KY

Invited instructor, June 1990, M.B. L., Marine Ecology Course, Woods Hole, MA

Invited instructor, June 1990, M. B. L., Microbial Diversity, Woods Hole, MA

Invited speaker, Marine Science Department October, 1990, Florida St. University

Distinguished speaker, November 1990, NATO Advanced Study Institute, Maratea, Italy

Invited instructor, July. 1991, Marine Biological Laboratory, Marine Ecology Course, Woods Hole, MA

Invited speaker, Oct., 1991, International Marine Biotechnology Conf., Balt. MD.

Invited speaker, Scripps Inst. of Oceanography, April, 1992

Invited Speaker, Gordon Conference in Environmental Science, June 1992

Invited Instructor, Molecular biology of marine organisms, Catalina Is. July 1992

Invited speaker, Biology Dept., University of Southern Ca., December 1, 1992

Invited speaker, Agouron Institute, La Jolla, Ca., March 12, 1993

Invited speaker, California Institute of Technology, April 28, 1993

Invited speaker, DOE Small Genome Workshop, Washington DC, July 1993

Invited speaker, Microbiology Dept. University of WA. November, 1993

Invited speaker, Biology Dept., Univ. No. Carolina, Wilmington, November 1993

Invited speaker, Biol. Dept., Harvey Mudd College, Los Angeles, December 1993

Invited speaker, West Coast Bacterial Physiologists, Pacific Grove CA, Dec. 1993

Invited speaker, International Union of Microbiological Sciences Meeting, Session on microbial diversity, Prague, Czech Republic, July 3-8.

Invited speaker, "Symposium on microbial diversity in space and time", sponsored by International Committee on Microbial Ecology", Tokyo, Japan, Oct. 24-26, 1994.

Invited speaker, Ocean Research Institute, Tokyo Univ., Japan, Oct. 27, 1994.

Invited speaker, Symposium on microbial diversity, Ann meeting ASM, May 1995

Invited speaker, June 1, 1995, Microbiology Dept. Seminar, Univ. Georgia, Athens, GA

Invited speaker, June 11, 1995 International Symposium on exploration of microbial diversity, Goslar, Germany

Invited speaker, June 14, 1995, Gesellschaft fur Biotechnologische, Braunschweig, Germany

Invited speaker, Symposium on the Application of molecular techniques to environmental problems, 96th annual meeting of the ASM, May 1996.

Invited speaker, Gordon Conference on Archaea, Ecology, metabolism and molecular biology, July 14, 1996.

Invited speaker, Monterey Bay Aquarium Research Institute Seminar Series, January, 1997.

Invited speaker, Ridge Symposium on the Deep Subsurface Biosphere, Washington D. C., March 18, 1997

Invited speaker, ASM Annual Meeting, Session on Impact of genomics on research agenda, Miami, FL May 5 1997.

Invited speaker, NSF 4th annual hyperthermophile symposium, San Diego Ca, May 14, 1997.

Invited speaker, Center for Microbial Ecology, East Lansing MI May 22, 1997.

Invited speaker, Center for Environmental Biotechnology, Lawrence Berkely Natl Lab, June 5, 1997.

Invited speaker, Plant and Microbial Biology Dept. , UC Berkeley, September 22, 1997

Invited speaker, Workshop on Molecular Evolution, Marine Biological Laboratory, Woods Hole, MA, October, 1997.

Invited speaker, Dept. of Microbiology, Stanford Univ., Palo Alto, Ca , March 1998.

Invited speaker, Annual meeting, American Society for Microbiol., May 1998, Atlanta Ga.

Invited speaker, Closing Address, Argentine Society for Microbiology Annual Meeting, August 1998, Buenos Aires, Argentina.

Invited participant, Space Studies Science Board, National Research Council, National Academy of Sciences, Workshop on size limits of very small microorganisms, Oct. 1998

Invited speaker, Dept. of Biology, University of Maine, Orono Maine, Nov. 1998

Invited speaker, Skidaway Instit. of Oceanography, Savannah, Georgia. December 1998

Invited speaker, Biology Dept. Scripps Instit. of Oceanog., January 1999

Invited speaker, Microbiology Dept, University of Illinois, Urbana, April 1999

Invited speaker, NASA AMES, Palo Alto, CA April 1999

Invited speaker, Canadian Soc. for Microbiol., Annual Meeting, Montreal, CA, June 1999

Invited speaker, Society of Naturalists, Evolution Meeting, Madison, WI, June 1999

Invited speaker, Int. Union Microbiol. Sci. Ann. Meeting, Sydney Australia, August 1999.

Invited, Australian Society of Microbiology, "Australia speaking tour", August 1999 :

Invited speaker, University of Queensland, Brisbane, Australia, Aug 22 & 23

Invited speaker, ASM Canberra branch, Australia, Aug. 26

Invited speaker, ASM Tasmania branch, Australia, Aug. 28

Invited speaker, Flinders Univ., Adelaide, Australia, Aug 30

Invited speaker, Univ. of Adelaide, Australia, Aug 30

Plenary speaker, 11th Annual Genome Sequencing Conf., Miama, FL, Sept. 1999

Invited NSF delegate, SCAR meeting on Research planning for Lake Vostok, Sept. 1999

Invited speaker, NOAA/NOS, Charleston, South Carolina, April, 2000.

Invited speaker, Rutgers University, New Brunswick, NJ, April 2000.

Invited speaker, 101 Annual Meeting of the ASM, Los Angeles, CA, May 2000

Lecturer, MBL Microbial Diversity course, June 2000.

Speaker, Ridge Theoretical Institute on the Subsurface Biosphere, Aug 2000

Plenary speaker, 12th Annual Genome Sequencing Conf., Miama, FL, Sept. 2000

Invited speaker, 8th Small Genomes Conference, Lake Arrowhead, CA, Sept 2000

Invited speaker, Ridge In situ sensors workshop, Aptos, CA Oct 2000

Invited Speaker, ASM/TIGR Microbial Genome Conference, Monterey, Jan 2001

Keynote speaker, Univ. Cal. Berkeley Microbiology Student Assoc., April 2001

Invited speaker, Univ of Colorado, April, 2001

Invited speaker, Univ. of Washington Dept. of Oceanog. Dept, May, 2001.

Invited participant, DOE Workshop on the Role of Biotechnology in Addressing Greenhouse Gas Concentrations, Washington DC, June 2001.

Invited participant, DOE Visions workshop, Baltimore, Md., June 2001.

Invited Lecturer, MBL Microbial Diversity course, Woods Hole, MA, July 2001.

Invited participant, NASA Extreme Environments workshop, July 2001.

Plenary speaker, International Society for Microbial Ecology Meeting, Amsterdam, August 2001.

Invited speaker, Annual meeting of the Japanese Society for Molecular Biology, Tokyo, Japan, Dec 2001

Invited Speaker, Inaugural address for the International Society for Extremophiles, Tokyo, Japan, Dec 2001

Invited Speaker, Western Photosynthesis Conference, Asilomar, Monterey, CA, Jan 2002

Invited speaker, Colloquium on Molecular Biosciences, Pacific Northwest Laboratory, DOE, Richland WA., January 2002.

Invited Speaker, Geobiology Seminars, California Institute of Technology, Pasadena, CA, January 2002.

Invited speaker, 9th DOE Genome Workshop, Oakland, CA, January 2002.

Invited speaker, Session on Geobiology, AAAS Annual Meeting, Boston, February 2002.

Invited lecture, Course in Oceanic Biology, Hopkins Marine Station, February 2002.

NRC Review Panel, NRC Postdoctoral Fellowships, February 2002.

Invited Speaker, Biology Dept., Stanford University, March 2002

Distinguished lecturer, Miami University, Oxford, Ohio April 2002.

Invited lecture, course in Marine Microbiology, UC Santa Cruz, April 2002.

Member of the Fachbeirat (Advisory Board) for the Max Planck Institute für Marine Microbiologie. (Six year review of the Institute in Bremen, Germany) April 2002.

Division lecture, Annual meeting of the American Society of Microbiology, Salt Lake City Utah, May 2002.

Convener and speaker, Session on environmental population genomics, Annual meeting of the American Society of Microbiology, Salt Lake City Utah, May 2002.

Convener and speaker, Session on Microbial activities on a global scale, Annual meeting of the American Society of Microbiology, Salt Lake City Utah, May 200

Presidents Forum lecture, Annual meeting of the American Society of Microbiology, Salt Lake City Utah, May 2002.

Invited speaker, Meeting of the International Union of the Microbiological Sciences, Paris, FR, July 30, 2002

NSF Review Panel on Microbial Observatories, September 2002.

Invited Seminar, Dept of Civil and Environ. Engineering, M.I.T, Boston, MA October 1-2, 2002.

Plenary address, 14th International Genome Sequencing and Analysis Conference, October 5, 2002
Boston, MA

Chair and Organizer, American Academy of Microbiology Colloquium on “The global genome question”, Sarasota FL, October 10-12, 2002

Member of NRC Ocean Studies Board Committee on ‘The Implementation of a Seafloor Observatory Network for Oceanographic Research’, First meeting October 22-23, 2002.

Invited speaker, Harvard Medical School, October 25, 2002.

Invited speaker, Course on Advances In Genome Technology And Bioinformatics, Sponsored by the MBL and TIGR, October 26, 2002

Invited speaker, Biology Department, California State University Humboldt, Arcata CA, January 17, 2003.

Invited Speaker, Biology Dept. Harvard University, Boston, MA, February 27, 2003.

Invited speaker, DOE/JGI meeting on Frontiers in Genome Science, Santa Fe, New Mexico, March 30, 2003.

Keynote speaker, University of New Mexico, Biology Dept. Research Day, Albuquerque, N.M., April 4, 2003.

Invited speaker, American Museum of Natural History, April 11, 2003. N.Y., N.Y.

Invited speaker. UCSF Biochemistry Dept., San Francisco, CA, April 22, 2003.

Invited speaker, Annual meeting of the American Society of Microbiology, Washington DC, May 2003.

NSF Review Panel on Microbial Genome Sequencing, June 2003.

Keynote address, First International Workshop on Metagenomics: From Microbial Diversity to Function Darmstadt, Germany, June, 2003.

Invited Speaker, Mini symposium on “Early Chemistry and the Evolution of Metabolism”, Geobiology summer course, Catalina, CA June 2003.

Invited speaker, : XIX International Congress of Genetics, Melbourne Australia, July 2003.

Invited participant, Joint Genome Institute Retreat, July 2003, Pacifica CA

Invited speaker, Gordon conference on Archaea, New Hampshire, August, 2003.

Plenary speaker, Marine Biotechnology Conference, September 2003, Chiba Japan

Keynote address speaker. Genome Canada and Environment Canada Environmental Genomics workshop, Toronto, CA Oct 2003.

Invited speaker. Microbiology Dept. Seminar, University of Illinois, Urbana, Oct, 2003.

Invited speaker, CEE Distinguished speaker series, MIT, Cambridge MA, October 2003.

Invited presentation, National Research Council Ocean Studies Board Meeting , November 2003.

Plenary lecture, 4th International Conference on Systems Biology, St. Louis MO., November 2003.

Invited speaker, Biology Dept UC Santa Cruz, December 2003.

Co-organized and hosted at MBARI a workshop in marine microbiology (“Unveiling the Ocean’s hidden majority: a roadmap”), funded by the Sloan and Moore Foundations, November 19-21, 2003.

Completed whitepaper write-up from 2002 American Academy of Microbiology Colloquium on “The global genome question” with co-organizer, Dr. David Relman of Stanford.

Invited lecture, Integrative Microbiology Distinguished Lecturer's Series, UC San Diego, La Jolla, CA January 2004.

Invited lecture, Graduate student seminar series, Biology Department, Cornell University, Ithaca N.Y., February 2004

Panelist, NSF Microbial Genome Sequencing program, Arlington VA, March 2004

Keynote speaker, Canada Environmental Genomics Program, McMaster University, Toronto Canada, May 2004.

Mini-symposium speaker, MBL Microbial Ecology course, Woods Hole, MA July 2004.

Plenary talk, Annual NSF Meeting on Microbial Observatories, Big Sky, Montana, September 2004.

Keynote Address, Annual Microbial Genomes Meeting, Lake Arrowhead, CA September 2004.

Invited speaker, Canadian Institute for Advanced Research Evolutionary Biology Program, Hotel du Lac Carling, Quebec October 2004.

Invited speaker, Agouon Institute research planning meeting, Pasadena CA, November 2004.

Invited speaker, Northeastern University, Biology Dept. January, 2005.

Keynote speaker, Microbial Science Initiative Symposium, Harvard University, Boston, MA April 2005.

Honorary Stone Memorial Lecturer, Pennsylvania State University, Dept. Biochemistry and Molecular Biology, College Park, PA April 2005.

Keynote Speaker, MBL Microbial Diversity Course Symposium, Woods Hole, MA, June 2005

Session chair and speaker, Environmental genomics session, International Union of Microbiological Sciences, San Francisco, CA, July 2005.

DOE Life Sciences Committee of Visitors (COV) review, Washington, D.C., May 2005.

NIH Natural Products Roadmap proposal review panel, Washington DC, June 2005.

Keynote Speaker, MBL Microbial Diversity Course Symposium, Woods Hole, MA, June 2005.

Invited speaker and symposium organizer, Environmental genomics, International Union of Microbiological Sciences Meeting, San Francisco, CA, August 2005.

Plenary speaker, Ecogenomics conference, Kansas State University, November, 2005.

Guest Instructor, Austral summer course in Oceanography, Dichato, Chile January 2006

Invited Speaker, Biology Dept., Univ. Las Vegas, Nevada, January 2006.

Co-organizer and speaker, Keystone Symposium, Microbial Community Genomics in Animals and in the Environment, Lake Tahoe, CA, February 2006.

Invited speaker, Session on Microbial Oceanography, Annual meeting of AAAS, St Louis, MO, February 2006.

Invited speaker, NSF Directorate for Biological Sciences Distinguished Lecture, Arlington VA, March 2006.

Invited speaker, 1st annual JGI Users Conference, Walnut Creek, CA, March 2006.

Plenary Lecture, American Society of Microbiology Conference for Undergraduate Educators, Orlando FL, May 2006

Invited speaker, 2nd Annual Sino Singapore-MIT-Alliance Symposium on Computational and Systems Biology. Shanghai, China, May 2006.

Invited speaker, MBL course in Microbial Diversity, Woods Hole MA. July 5, 2006

Invited speaker, Gordon Conference on Marine Microbiology, Maine, July 2006.

Guest instructor, Agouron Course in Marine Microbiology, Honolulu. HI., August, 2006

Closing plenary lecture, Int. Society of Microbial Ecology meeting, Vienna Austria, Aug 2006.

Invited Speaker, Metagenomics 2006 Meeting, La Jolla, CA, October, 2006.

Invited speaker, Chemical Engineering Dept Seminar Series, Univ. Toronto, January 2007.

Invited speaker, Microbiology Dept., Ohio State University, February 2007.

Plenary talk, Future of Biology, Univ. of Illinois, Champaign, Urbana, February 2007.

Plenary speaker, NSF Annual Microbial Observatory Meeting, Washington D. C. March 2007

Invited Speaker, Origins of Life: adapting to the environment. Institute for Advanced Study, Princeton, N. J., April 2007.

Opening session speaker, Annual meeting of the American Society of Microbiology, Toronto Canada, May 2007

Invited speaker, American Society for Microbiology, Colloquium on “Biogeochemistry and evolving microbes – whats elements got to do with it?”, Toronto Canada, May 2007.

Invited speaker, Agouron Summer Course Symposium, Biodiversity, speciation, and the “-omics” of marine microorganisms, July 2007, Honolulu, HI

TEACHING

UCSB

BIO4C	Introductory Biology	Spring 1993, 1994, 1995, 1996, 1997
BIO142	Marine Microbiology,	Winter 1994, 1995, 1996
BIO142L	Marine Microbiol. lab	Winter 1995, 1996
EEMB129	Introductory Genetics	Winter 1997

Taught 1 -2 UCSB graduate seminars per year, 1993-1997

M.I.T.

CEE	Microbial Genomes	Spring 2005
CEE.1.018J	Ecology of Earth System	FALL 2005
BE.106	Microbial systems	FALL 2005
CEE.1.018J	Ecology of Earth System	FALL 2006
20.106	Microbial systems	FALL 2006

PhD Student Supervised:

Laura Gordesky	S93	UCSB, member
Carol Kosman	S96	UCSB, co-chair
Yong Hi Hong	F93	UCSB, member
Rafael Jovine	F94	UCSB, member
Michael Franklin	S97	UCSB, member
John Ashen	W98	UCSC, member
Timothy Hovanec	F98	UCSB, member (C.S.O., Aquaria)
Debra Bemis	F98	UCSB, member
Terrence J. Evans.	F98	UCSB, member
Christina Preston	W98	UCSB, chair (Res. Technician, MBARI)
Allison Murray	W98	UCSB, chair (Assoc. Scient., Desert Research Inst)
Paul Fowler	W99	UCSB, chair
Victoria Orphan	W01	UCSB, chair (Assist. Prof., Cal. Tech)
Laura Fandino	S02	UCSD, SIO, member
Virginia Rich	current	MIT, chair
Yanmei Shi	current	MIT, chair
Jennifer Braff	current	MIT, chair
Justin Buck	current	MIT, chair
Laura Anne Ventouras	current	MIT, chair
Sara Lincoln,	current	MIT, co-chair

Postdoctoral Scholars Supervised:

Dr. Thomas J. DiChristina	1990-1993 (Assoc. Prof., Georgia Tech.)
Dr. Ramon Massana	1995-1997 (Scientist, Institut de Ciències Mar)
Dr. Christa Schleper	1995-1997 (Prof. Univ. Vienna)
Dr. Oded Beja	1998-2001 (Assoc. Prof. Technion)
Dr. Marcelino Suzuki	1997-2000 (Assist Prof. Univ Md.)
Dr. Grieg Steward	1998-2000 (Assist. Prof., Univ Hawaii)
Dr. Jose' de la Torre	2001-2003 (Postdoc Assoc., Univ, Washington)
Dr. Peter Girguis	2000-2004 (Assist. Prof., Harvard)
Dr. .Niels-Ulrik Frigaard	2004-2005 (Assoc, Prof., Univ. Copenhagen)
Dr. Steven Hallam	2001-2005 (Assist Prof, Univ British Columbia)
Dr. Kostas Konstantinidis	2005-2007 (Assist. Prof., Georgia Inst. Technol.)
Dr. Tracy Mincer	2004-2007 (Assist. Scientist, Woods Hole Oceanog.)
Dr. Vinh Pham	2005-present
Dr. Jay McCarren	2005-present
Dr. Kostas Konstantinidis	2005-present
Dr. Gene Tyson	2006-present
Dr. Julia Maresca	2007-present