

CURRICULUM VITAE
DANIEL EDWARD DYKHUIZEN

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I. EDUCATION

1961-65	B.S.	Stanford University	Mathematics
1965-70	Ph.D.	University of Chicago	Population Genetics (R. C. Lewontin)
1970-72	Post-doc.	Stanford University	Microbial Genetics (A. Campbell)

II. EMPLOYMENT

1972 - 1976 Research Fellow.
Genetics Department, Research School of Biological Sciences,
The Australian National University.

1976-1978 Research Assistant (D. L. Hartl).
1978-1980 Assistant Research Scientist.
1980-1981 Associate Research Scientist.
Biology Department, **Purdue University.**

1981-1987 Associate Research Professor.
Genetics Department, **Washington University in St. Louis.**

2001 Professeur invité,
Institut Pasteur.

2006-2007 Professor.
Biology Department, **University of Louisville**

2011-2012 Visiting Scholar, Microbial section, **Broad
Institute**

1987-1989 Assistant Professor.
1989-1992 Associate Professor.
1992-2009 Professor.
2009- Distinguished Professor
Department of Ecology and Evolution, **SUNY at Stony Brook.**

III. PROFESSIONAL MEMBERSHIPS AND HONORS

1. **Fellow** AAAS (1988)

2. **Fellow** American Academy of Microbiology (2001)
3. American Society for Microbiology
4. Society for the Study of Evolution (until 2003)
5. Society for Molecular Biology and Evolution (until 2003)
6. Genetics Society of America
7. American Association for the Advancement of Science
8. Distinguished Professor (2009)
9. Award for Faculty Mentoring, Stony Brook University (2011)

IV. RESEARCH

1. Publications:

1 thesis

76 articles of original research in reviewed journals

24 review articles and book chapters

15 letters and comments

5 book reviews

7 published abstracts

1 patent

These publications have been cited 5,777 times from January 1972 to August 1, 2013. $h=40$. See appendix 1 for a detailed list of publications.

2. Presentations:

34 featured talks, details in appendix 2

72 invited seminars

41 contributed papers

3. Grants:

National Institutes of Health, 7 grants, 1978-1991, 2000-2012.

National Institutes of Health, program project, 1997-2002.

National Science Foundation, 2 grants, 1987-1993, 1996-2000.

Center for Disease Control, 1 grant, 1994-1997.

See appendix 3 for details.

V. TEACHING

1. Courses Taught:

Three different undergraduate courses taught 34 times
 Four Different graduate courses taught 20 times
 Ten different graduate seminars and 6 ESAC seminars
 See appendix 4 for names of courses and years taught

2. Research Training in my laboratory or Independent Reading:

1 Visiting Faculty
 6 Postdocs
 22 Graduate Students
 22 Undergraduates
 7 High School Students
 See appendix 4 for names.

3. Graduate Student Thesis Committees:

62, see appendix 4 for names.

4. Doctoral Students:

1. Antony M. Dean, 1987, Fitness of β -galactosidase Alleles in *Escherichia coli*. (with D. L. Hartl). Professor, University of Minnesota.
2. Pedro Joan Neves e Silva, 1992, Natural Selection at the *lac* operon of *Escherichia coli*. Assistant Professor, University of Lisbon.
3. Stephan Shawn McCafferty, 1993, Mitochondrial DNA variability and heteroplasmy in the blue mussel, *Mytilus edulis*. Assistant Professor, Wheaton College, Norton, MA
4. David Stuart Guttman, 1994, Natural selection and recombination in *Escherichia coli*. Professor, Director of the Centre for the Analysis of Genome Evolution & Function, and Canada Research Chair in Comparative Genomics, University of Toronto, Toronto, Canada.
5. Ing-Nang Wang, 1998, Evolution of enzyme activities at a branched pathway in *Escherichia coli*. Associate Professor, SUNY, Albany, N.Y.
6. Wei-Gang Qiu, 1999, Comparative population genetics of Lyme disease spirochete (*Borrelia burgdorferi*) and its tick vector (*Ixodes scapularis*) in the United States. Associate Professor, Hunter College, N.Y., N.Y.
7. Dustin Brisson, 2006, Effect of Host Community Composition on the Diversity and Abundance of Lyme disease. Assistant Professor, University of Pennsylvania, Philadelphia, PA.
8. Daniel Stoebel, 2006, Regulatory Evolution and

Horizontal Acquisition of the LAC Operon in
Escherichia Coli. Assistant Professor, Harvey Mudd
College, Claremont, CA

9. Javier Monzon, 2012, Rapid Evolution of Northeastern
Coyotes.

5. Master's Students:

1. Gregory Ugine, 1996
2. Trista Wagoner, 1999
3. Xianfa Xie, 2000
4. Fabrizio Spagnolo, 2011
5. Kristen Pepe, 2011
6. Conrad Rinaldi, 2013

6. Current Graduate Students

1. Omar Wasi
2. Gena Sbeglia
3. Fabrizio Spagnolo

VI. PROFESSIONAL SERVICE

1. Meeting Organizer:

I have organized or helped organize three Gordon
Conferences, four Symposiums and one workshop. See
appendix 5 for names and dates.

2. Editorships:

I have been an editor of six journals and am currently
Editor in Chief of the Quarterly Review of Biology. See
Appendix 5 for journals and dates

3. Society Offices and Committees.

I have served in three offices and on two committees. See
Appendix 5 for names and dates.

4. Grant Panels:

I have served on 27 grant panels and was a permanent member
of the Genetic Variation and Evolution panel of NIH. See
Appendix 5 for names and dates.

5. Other:

Member of the Faculty of 1000 (1992-2009)
Consultant for APUA (Alliance for the Prudent Use of
Antibiotics) (2005-7)

6. Reviewing:

I have reviewed hundreds of manuscripts for 39 different
publications. The list of publications is given in
appendix 5.

I have reviewed hundreds of grant proposals for 11 different
agencies. The list of agencies is given in appendix 5.

VII. UNIVERSITY SERVICE

1. Administrative:

1995-98 - Director of Graduate Studies in Ecology and Evolution.

1990,91,94,99 - Acting Director for GSEE (summer).

1994 - Acting Chair of Ecology and Evolution Dept. (August).

2. University Committees:

I served on eight different University committees and was departmental representative to the University and Arts and Sciences Senate. See Appendix 6 for names and dates.

3. Program and Department Committees: Thirty-five

I served on thirty-five different department committees. See Appendix 6 for names and dates.

APPENDIX 1 PUBLICATIONS

The number of citations to each article through 8/1/2013 is given in parentheses after the article.

- 1971 **Dykhuizen, D.**, "Evolution of nutritional requirements: Selection for tryptophan mutants of *Escherichia coli* over wild-type in energy-limited chemostats." **Ph.D. Dissertation**, University of Chicago. (3)
- 1972 Shizuya, H., and **D. Dykhuizen**, "Conditional lethality of deletions which include *uvrB* in strains of *Escherichia coli* lacking deoxyribonucleic acid polymerase I." **J. Bact.** 112:676-681. (21)
- 1973 **Dykhuizen, D.**, "Genetic analysis of the system that reduces D-biotin-d-sulfoxide in *Escherichia coli*." **J. Bact.** 115:662-667. (18)
- 1974 Cleary, P. P. and **D. Dykhuizen**, "Enzymatic reduction of D-biotin-d-sulfoxide with cell-free extracts of *Escherichia coli*." **Biochem. Biophys. Res. Commun.** 56:629-634. (18)
- 1974 **Dykhuizen, D.**, "Evolution of cell senescence, atherosclerosis and benign tumours." **Nature (London)** 251:616-618. Reprinted in (ed. Adela S. Baer) Heredity and Society (2nd ed.), pp. 212-216, Macmillan Publishing Co., New York, 1977. (23)
- 1975 **Dykhuizen, D.**, "Reply to Mr. Widdus." **Nature (London)** 256:149.
- 1977 **Dykhuizen, D.**, "Selection for lactose constitutives of *E. coli* in the chemostat." **Genetics** 86:s17. (1)
- 1978 **Dykhuizen, D.**, "Selection for tryptophan auxotrophs of *Escherichia coli* in the glucose-limited chemostats as a test of the energy conservation hypothesis of evolution." **Evolution** 32:125-150. (82)
- 1978 **Dykhuizen, D.**, and D. L. Hartl, "Transport by the lactose permease of *Escherichia coli* as the basis of lactose killing." **J. Bact.** 135:876-882. (40)
- 1978 Campbell, J. H., **D. Dykhuizen** and B. G. Rolfe, "Effects of the *rex* gene of phage Lambda on lysogeny." **Genet. Res. Camb.** 32:257-263. (2)

- 1978 **Dykhuisen, D.**, J. H. Campbell, and B. G. Rolfe, "The influences of a Lambda phophage on the growth rate of *Escherichia coli*." **Microbios** 23:99-113. (15)
- 1979 del Campillo-Campbell, A., **D. Dykhuisen** and P. P. Cleary, "Enzymatic reduction of D-biotin-*d*-sulfoxide to D-biotin." In (ed. Colowick and Kaplan) **Methods in Enzymology**, Vol. 62, Part D:379-389. (23)
- 1979 Hartl, D. L., and **D. Dykhuisen**, "A Selectively Driven Molecular Clock." **Nature (London)** 281:230-231. (22)
- 1979 Hartl, D. L., and **D. Dykhuisen**, "Genetic map of *uxaA-egbA-tolC-metC* region in *Escherichia coli*." **Genetics** 91:s44-s45.
- 1980 **Dykhuisen, D.**, and D. L. Hartl, "Molecular clockwork: Reply to Van Valen." **Nature (London)** 287:90. (1)
- 1980 **Dykhuisen, D.**, and M. Davies, "An experimental model: Bacterial specialists and generalists competing in chemostats." **Ecology** 61:1213-1227. (73)
- 1980 **Dykhuisen, D.**, K. M. Harrison and B. J. Richardson, "Evolutionary implications of ascorbic acid production in the Australian lungfish." **Experientia** 36:945-946. (14)
- 1980 **Dykhuisen, D.**, and D. L. Hartl, "Selective Neutrality of 6PGD Allozymes in *E. coli* and the Effects of Genetic Background." **Genetics** 96:801-817. (162)
- 1981 Hartl, D. L., and **D. Dykhuisen**, "Potential for selection among nearly neutral allozymes of 6-phosphogluconate dehydrogenase in *Escherichia coli*." **Proc. Natl. Acad. Sci. USA** 78:6344-6348. (66)
- 1981 **Dykhuisen, D.**, and D. L. Hartl, "Evolution of competitive ability in *Escherichia coli*." **Evolution** 35:581-594. (51)
- 1982 **Dykhuisen, D. E.**, "Chemostat studies of selection involving electrophoretic variants of phosphoglucose isomerase in *Escherichia coli*." **Genetics** 100:s21. (2)
- 1983 **Dykhuisen, D. E.**, and D. L. Hartl, "Selection in chemostats." **Microbiological Reviews** 47:150-168. (309)

- 1983 **Dykhuisen, D. E.**, and D. L. Hartl, "Functional effects of PGI allozymes in *Escherichia coli*." **Genetics** 105:1-18. (52)
- 1983 Hartl, D. L., **D. E. Dykhuisen**, R. Miller, L. Green and J. de Framond, "Transposable Element IS50 Improves Growth Rate of *E. coli* Cells Without Transposition." **Cell** 35:503-510. (92)
- 1984 Hartl, D. L., **D. E. Dykhuisen** and D. E. Berg, "Accessory DNA's in the bacterial gene pool: Playground for coevolution." In **Ciba Foundation Symp. 102, Origins and Development of Adaptations**, Pitman Books, London. pp.233-245. (16)
- 1984 **Dykhuisen, D. E.**, J. de Framond, and D. L. Hartl, "Selective neutrality of glucose-6-phosphate dehydrogenase allozymes in *Escherichia coli*." **Mol. Bio. Evol.** 1:162-170. (11)
- 1984 **Dykhuisen, D. E.**, "Chemostats". In **1985 McGraw-Hill Yearbook of Science and Technology**, McGraw-Hill, New York. pp.111-113.
- 1984 **Dykhuisen, D. E.**, J. de Framond and D. L. Hartl, "Potential for hitchhiking in the *edd-eda-zwf* gene cluster in *Escherichia coli*." **Genet. Res.** 43:229-239. (5)
- 1984 Green, L., R. D. Miller, **D. E. Dykhuisen** and D. L. Hartl, "Distribution of DNA insertion element IS5 in natural isolates of *Escherichia coli*." **Proc. Natl. Acad. Sci. U.S.A.** 81:4500-4504. (45)
- 1984 Hartl, D. L., and **D. E. Dykhuisen**, "Population genetics of *Escherichia coli*." **Ann. Rev. Genet.** 18:31-68. (208)
- 1984 Miller, R. D., **D. E. Dykhuisen**, L. Green and D. L. Hartl, "Specific deletion occurring in the directed evolution of 6-phosphogluconate dehydrogenase in *Escherichia coli*." **Genetics** 108:765-772. (7)
- 1984 Miller, R. D., L. Green, **D.E. Dykhuisen** and D.L. Hartl, "The distribution of IS4 and its flanking chromosomal sequence in a reference collection of natural *Escherichia coli*." **Genetics** 107:s74.

- 1985 **Dykhuisen, D. E.**, C. Mudd and D. L. Hartl, "Polymorphic posttranslational modification of alkaline phosphatase in *Escherichia coli*." **Evolution** 39:1-7. (5)
- 1985 Hartl, D. L., and **D. E. Dykhuisen**, "The neutral theory and the molecular basis of preadaptation". In (T. Ohta and K. Aoki, eds.) **Population Genetics and Molecular Evolution**, Japan Scientific Societies Press, Tokyo. pp.107-124. (15)
- 1985 **Dykhuisen, D. E.**, S. A. Sawyer, L. Green, R. D. Miller, and D. L. Hartl, "Joint distribution of insertion elements IS4 and IS5 in natural isolates of *Escherichia coli*." **Genetics** 111:219-231. (16)
- 1985 Hartl, D. L., **D. E. Dykhuisen** and A. M. Dean, "Limits of Adaptation: The Evolution of Selective Neutrality." **Genetics** 111:655-674. (184)
- 1986 Hartl, D. L., M. Medhora, L. Green, and **D. E. Dykhuisen**, "The evolution of DNA sequences in *Escherichia coli*." **Phil. Trans. Roy. Soc. Lond. B.** 312:191-204. (30)
- 1986 Dean, A. M., **D. E. Dykhuisen** and D. L. Hartl, "Fitness as a function of beta-galactosidase activity in *Escherichia coli*." **Genet. Res.** 48:1-8. (64)
- 1986 Hartl, D. L., A. M. Dean and **D. E. Dykhuisen**, "The molecular biology of natural selection: Reply to Burton and Place." **Genetics** 114:1037-1039. (4)
- 1986 **Dykhuisen, D. E.**, and L. Green, "DNA sequence variation, DNA phylogeny and recombination." **Genetics** 113:s71. (25)
- 1987 Sawyer, S. A., **D. E. Dykhuisen**, R. F. DuBose, L. Green, T. Mutangadura-Mhlanga, D. F. Wolczyk, and D. L. Hartl, "Distribution and abundance of insertion sequences among natural isolates of *Escherichia coli*." **Genetics** 115:51-63. (123)
- 1987 **Dykhuisen, D. E.**, A. M. Dean and D. L. Hartl, "Metabolic flux and fitness." **Genetics** 115:25-31. (145)
- 1987 Sawyer, S. A., **D. E. Dykhuisen**, and D. L. Hartl, "Confidence interval for the number of selectively neutral amino acid polymorphisms." **Proc. Natl Acad. Sci. USA** 84:6225-6228. (91)

- 1988 Dean, A. M., **D. E. Dykhuizen**, and D. L. Hartl, "Theories of metabolic control in quantitative genetics." In (B. S. Weir, E. J. Eisen, M. M. Goodman and G. Namkoong, eds.) **Proceedings of the 2nd International Conference on Quantitative Genetics**, Sinauer Associates Inc., Sunderland, MA. pp 536-548. (20)
- 1988 Dean, A. M., **D. E. Dykhuizen**, and D. L. Hartl, "Fitness effects of amino acid replacements in beta-galactosidase of *Escherichia coli*." **Mol. Bio. Evol.** 5:469-485. (30)
- 1988 DuBose, R. F., **D. E. Dykhuizen**, and D. L. Hartl, "Genetic exchange among natural isolates of bacteria: Recombination within the *phoA* locus of *Escherichia coli*." **Proc. Natl. Acad. Sci. USA** 85:7036-7040. (122)
- 1988 Miller, R. D., **D. E. Dykhuizen**, and D. L. Hartl, "Fitness effects of a deletion mutation increasing transcription of the 6-phosphogluconate dehydrogenase gene in *Escherichia coli*." **Mol. Bio. Evol.** 5:691-703. (6)
- 1988 **Dykhuizen, D. E.**, A. M. Dean, and D. L. Hartl, "The fitness effects of new amino acid substitutions." XVIth International Congress of Genetics. **Genome** 30:s380.
- 1988 Dean, A. M., **D. E. Dykhuizen**, D. L. Hartl, and R. H. Haynes, "Neutrality and selection in the lactose operon of *Escherichia coli*." XVIth International Congress of Genetics. **Genome** 30:s398.
- 1988 **Dykhuizen, D. E.**, Review of "Basic Biotechnology." **Quart. Rev. Biol.** 63:368-9.
- 1989 Lawrence, J. G., **D. E. Dykhuizen**, R. F. DuBose, and D. L. Hartl, "Phylogenetic analysis using insertion sequence fingerprinting in *Escherichia coli*." **Mol. Bio. Evol.** 6:1-14. (28)
- 1989 Slobodkin, L. B., and **D. E. Dykhuizen**, "The two roles of ecotoxicology." **Education and Research for Higher Agricultural Productivity Conserving Nature and Agrosystem in Asia and Pacific Countries** 3:117-124.
- 1990 **Dykhuizen, D. E.** and A. M. Dean, "Enzyme activity and fitness: Evolution in solution." **Trends Ecol. Evol.** 5:257-262. (86)

- 1990 **Dykhuizen, D. E.**, "Mountaineering with microbes." **Nature (London)** 346:15-16. (11)
- 1990 **Dykhuizen, D. E.**, "Experimental studies of natural selection in bacteria." **Annu. Rev. Ecol. System.** 21:373-398. (114)
- 1991 Kim, J., L. Ginzburg, and **D. E. Dykhuizen**, "The risk of invasion by genetically engineered organisms can be assessed quantitatively." In (L. Ginzburg, ed.) **Assessing Ecological Risks of Biotechnology**, Plenum Press. pp. 193-214. (3)
- 1991 Slobodkin, L. B. and **D. E. Dykhuizen**, "Applied ecology, its practice and philosophy." In (J. Cairns, Jr., and T. V. Crawford, ed.) **Integrated Environmental Management**, Lewis Publishers, Chelsea, MI, pp63-70. (1)
- 1991 **Dykhuizen, D. E.** and L. Green, "Recombination in *Escherichia coli* and the biological species definition." **J. Bact.** 173:7257-7268. (347)
- 1991 **Dykhuizen, D. E.**, Review of "Blueprints: Solving the mystery of evolution." **Quart. Rev. Biol.** 66:328-9.
- 1992 **Dykhuizen, D. E.**, "Experimental evolution: Replicating history" **Trends Ecol. Evol.** 7:250-2. (7)
- 1992 **Dykhuizen, D. E.**, "Periodic Selection." In (J. Lederberg, ed.) **Encyclopedia of Microbiology**, Vol 3, Academic Press, San Diego. pp. 351-355. (6)
- 1992 **Dykhuizen, D. E.**, Review of "Lord Kelvin and the age of the earth." **Quart. Rev. Biol.** 67:41-42.
- 1993 Silva, P. J. N. and **D. E. Dykhuizen**, "The latent potential for selection of the *lac* operon of *Escherichia coli*." **Evolution** 47:741-749. (14)
- 1993 McGrath, B. C., J. J. Dunn, L. L. France, W. Jaing, **D. E. Dykhuizen**, D. Polin, G. Gorgone, and B. J. Luft, 'Biochemical and Biophysical Characterization of the Major Outer Surface Protein from North American and European Isolates of *Borellia burgdorferi*." In **Vaccines 93**, Cold Spring Harbor Laboratory Press, Cold Spring Harbor, N.Y. pp.365-370. (2)

- 1993 **Dykhuizen, D. E.**, "Chemostats used for studying natural selection and adaptive evolution." **Methods Enzymol.** 224:613-631. (37)
- 1993 **Dykhuizen, D.E.**, D.S. Polin, J. Dunn, B. Wilske, V. Preac-Mursic, R.J. Dattwyler, and B.J. Luft, "*Borellia burgdorferi* is clonal: Implications for taxonomy and vaccine development." **Proc. Natl. Acad. Sci. USA** 90:10163-10167. (166)
- 1994 **Dykhuizen, D. E.** and A. M. Dean, "Predicted fitness changes along an environmental gradient." **Evol. Ecol.** 8:524-541. (18)
- 1994 Guttman, D. S. and **D. E. Dykhuizen**, "Clonal divergence in *Escherichia coli* is driven by recombination, not mutation." **Science** 266:1380-83. (303)
- 1994 Guttman, D. S. and **D. E. Dykhuizen**, "Detecting selective sweeps in naturally occurring *Escherichia coli*." **Genetics** 138:993-1003. (100)
- 1994 **Dykhuizen, D. E.**, Review of "Introduction to molecular cloning techniques". **Quart. Rev. Biol.** 69:265-66.
- 1995 **Dykhuizen, D. E.**, "Natural selection and the single gene." In (Baumberg, Young, Wellington and Saunders, ed) **Population Genetics of Bacteria**, Society for General Microbiology symposium 52, Cambridge University Press, Cambridge. pp.161-173. (12)
- 1995 McGrath, B. C., J. J. Dunn, G. Gorgone, B. J. Luft, D. Guttman, **D. E. Dykhuizen**, "Identification of an immunologically important hypervariable domain of the major outer surface protein A of *Borrelia burgdorferi*." **Infect. Immun.** 63:1356-1361. (19)
- 1996 Guttman, D. S., P. W. Wang, I.-N. Wang, E. M. Bosler, B. J. Luft, **D. E. Dykhuizen**, "Multiple Infection of *Ixodes scapularis* ticks by *Borrelia burgdorferi* as revealed by single-stranded confirmation polymorphism analysis." **J. Clin. Microbiol.** 34:652-656. (76)
- 1996 Wang, I.-N., **D. E. Dykhuizen**, L. B. Slobodkin, "The evolution of phage lysis timing." **Evol. Ecol.** 10:545-558. (99)

- 1997 **Dykhuizen, D. E.**, Review of "Evolution of the Genetic Code". **Quart. Rev. Biol.** 72:202.
- 1997 Qiu, W., E. M. Bosler, J. Campbell, G. D. Ugone, I.-N. Wang, B. J. Luft, **D. E. Dykhuizen**, "A population genetic study of *Borrelia burgdorferi* sensu stricto from eastern Long Island, New York." **Hereditas** 127:203-216. (27)
- 1998 Golde, W. T., B. Robinson-Dunn, M. G. Stobierski, **D. E. Dykhuizen**, I.-N. Wang, V. Carlson, H. Stiefel, S. Shiflett, G. L. Campbell, "Culture-confirmed reinfection of a person with different strains of *Borrelia burgdorferi* sensu stricto." **J. Clin. Microbiol.** 36:1015-1019. (25)
- 1998 **Dykhuizen, D. E.**, "Santa Rosalia revisited: Why are there so many species of bacteria?" **Antonie van Leeuwenhoek J. Microbiol.** 73:25-33. (247)
- 1998 Sokurenko, E. V., V. Chesnokova, **D. E. Dykhuizen**, I. Ofek, X.-R. Wu, K. A. Krogfelt, C. Struve, M. A. Schembri, D. L. Hasty, "Pathogenic adaptation of *Escherichia coli* by natural variation in the FimH adhesin." **Proc. Natl. Acad. Sci. USA** 95:8922-8926. (225)
- 1999 Wang, I.-N., **D. E. Dykhuizen**, J. J. Dunn, W. Qiu, E. M. Bosler, B. J. Luft, "Genetic diversity of *ospC* in a local population of *Borrelia burgdorferi* sensu stricto." **Genetics** 151:15-30. (166)
- 1999 Sokurenko, E. V., D. L. Hasty, **D.E. Dykhuizen**, "Pathoadaptive mutations: Gene loss and variation in bacterial pathogens." **Trends Microbiol.** 7:191-195. (118)
- 1999 Seinost, G., **D. E. Dykhuizen**, R. J. Dattwyler, W. T. Golde, J. J. Dunn, I.-N. Wang, G. P. Wormser, M. E. Schriefer, B. J. Luft, "Only four clones of *Borrelia burgdorferi* sensu stricto cause invasive infection in humans." **Infect. Immun.** 67:3518-3524. (183)
- 1999 Sokurenko, E. V., **D.E. Dykhuizen**, "Response to letter by E. Tuomanen." **Trends Microbiol.** 7:272.
- 1999 Seinost, G., W. T. Golde, B. W. Berger, J. J. Dunn, D. Qiu, D. D. Dunkin, **D. E. Dykhuizen**, B. J. Luft, R. J. Dattwyler, "Infection with multiple strains of

- Borrelia burgdorferi* sensu stricto in patients with Lyme disease." **Arch. Dermatol.** 135:1329-1333. (25)
- 2000 Rannala, B., W. G. Qiu, **D. E. Dykhuizen**, "Methods for estimating gene frequencies and detecting selection in bacterial populations." **Genetics** 155:499-508. (10)
- 2000 Gomes-Solecki, M. J. C., J. J. Dunn, B. J. Luft, J. Costillo, **D. E. Dykhuizen**, X. Yang, J. D. Glass, R. J. Dattwyler, "Recombinant chimeric *Borrelia* proteins for the diagnosis of Lyme disease." **J. Clin. Microbiol.** 38:2530-2535. (27)
- 2000 **Dykhuizen, D. E.**, "*Yersinia pestis*: an instant species?" **Trends Microbiol.** 8:296-298. (11)
- 2000 **Dykhuizen, D. E.**, "Natural Selection, Bacteria." In (J. Lederberg, ed.) **Encyclopedia of Microbiology**, 2nd Ed., 3:373-378.
- 2000 Dattwyler, R. J., G. Seinost, **D. Dykhuizen**, B. J. Luft, M. J. C. Gomes Solecki, "Groups of *Borrelia burgdorferi* and *Borrelia afzelii* that cause Lyme disease in humans." Patent application # 09/596,746 filed June 19,2000. Baxter International has licensed this patent for vaccine development. (5)
- 2001 Wang, I.-N., **D. E. Dykhuizen**, Variation of enzyme activities at a branched pathway involved in the utilization of gluconate in *Escherichia coli*." **Evolution** 55:897-908. (9)
- 2001 Baranton, G., G. Seinost, G. Theodore, D. Postic, **D. Dykhuizen**, "Distinct levels of genetic diversity of *Borrelia burgdorferi* are associated with different aspects of pathogenicity." **Res. Microbiol.** 152:149-156. (77)
- 2001 **Dykhuizen, D. E.**, G. Baranton, "Evolutionary implications of promiscuous recombination in *Borrelia*." **Trends Microbiol.** 9:344-350. (70)
- 2001 **Dykhuizen, D. E.**, G. Baranton, "Reply to Brian Stevenson." **Trends Microbiol.** 9:472 (2)
- 2001 Johnson, J. R., S. J Weissman, A. L. Stell, E. Tritchina, **D. E. Dykhuizen**, and Evgeni V. Sokurenko, "Clonal and Pathotypic Analysis of Archetypal

- Escherichia coli* Cystitis Isolate NU14." **J. Infec. Dis.** 184:1556-1565. (42)
- 2001 Schmidt, T., M. Kane, **D. Dykhuizen**, F. Rainey, K Field, "Announcing the division of evolutionary and genomic microbiology." **ASM News** 67:431.
- 2002 Qiu, W.-G., **D. E. Dykhuizen**, M. S. Acosta, B. J. Luft, "Shared Demographic History but Discordant Genetic Structure of the Lyme Disease Spirochete (*Borrelia burgdorferi*) and its Tick Vector (*Ixodes scapularis*) in Northeastern United States." **Genetics** 160:833-849. (116)
- 2002 Lunzer, M., A. Natarajan, **D. E. Dykhuizen**, A. M. Dean, "Enzyme kinetics, substitutable resources and competition: From biochemistry to frequency dependent selection in *lac*." **Genetics** 162:485-499. (29)
- 2003 Feldgarden, M., D. M. Stoebel, D. Brisson, **D. E. Dykhuizen**, "Size doesn't matter: Microbial selection experiments address ecological phenomena." **Ecology** 84:1679-1687. (8)
- 2003 Weissman, S. J., S. L. Moseley, E. V. Sokurenko, **D. E. Dykhuizen**, "Enterbacterial adhesins and the case for studying SNPs in bacteria." **Trends Microbiol.** 11:115-117. (39)
- 2003 Bull, J., **D. Dykhuizen**, "Epidemics-in-waiting." **Nature** 426:609-610. (6)
- 2003 Weissman, S. J., E. Trintchina, M. Feldgarden, **D. Dykhuizen** J. Johnson, E. Sokurenko, "The role of single nucleotide polymorphisms of the type 1 fimbrial determinates in molecular diagnosis of *Escherichia coli* O18:K1:H7 carriage." **Pediatr. Res.** 53:325A. (2)
- 2004 Sokurenko, E. V., M. Feldgarden, E. Trintchina, S. J. Weissman, S. Avagyan, J. Johnson, **D. E. Dykhuizen**, "Selection Footprint in the FimH Adhesin Shows Pathogenicity-Adaptive Niche Differentiation in *Escherichia coli*." **Mol. Biol. Evol.** 21:1373-1383. (61)
- 2004 Zhong, S., A. Kodursky, **D. E. Dykhuizen**, A. M. Dean, Evolutionary Genomics of Ecological Specialization." **Proc. Natl. Acad. Sci. USA** 101:11719-11724. (60)

- 2004 **Dykhuizen, D. E.**, A. M. Dean, "Evolution of specialists in an experimental microcosm." **Genetics** 167:2015-2026. (29)
- 2004 Brisson, D., **D. E. Dykhuizen**, "ospC Diversity in *Borrelia burgdorferi*: Different hosts are different niches". **Genetics** 168:713-722. (103)
- 2005 Hasty, D. L., X.-R. Wu, **D. E. Dykhuizen**, E. V. Sokurenko, "Allelic variation of the FimH Lectin of *Escherichia coli* Type 1 Fimbriae and Uropathogenesis." In (Ed. J. P. Nataro et al.) **Colonization of Mucosal Surfaces**. P. 351-377. ASM Press, Washington, D.C. (2)
- 2005 **Dykhuizen, D. E.**, "Species numbers in bacteria". **Proc. Cal. Acad. Sci.** 56s1: 62-71. (1)
- 2006 Weissman, S. J., E. L. Trintchina, P. Aprikian, M. Feldgarden, M. Obata-Yasuoko, **D. Dykhuizen**, J. R. Johnson, E. V. Sokurenko, "Clonal analysis reveals high rate of structural mutations in fimbrial adhesions of extraintestinal pathogenic *E. coli*." **Mol Micro** 59:975-988. (56)
- 2006 Brisson, D., **D. E. Dykhuizen**, A modest model explains the distribution and abundance of *Borrelia burgdorferi* strains." **Am. J. Tropical Med Hygiene** 74:615-622. (21)
- 2006 Sokurenko, E. V., R. Gomulkiewicz, and **D. E. Dykhuizen**, "Source-sink dynamics of virulence evolution" **Nature Rev. Microbiol.** 4:548-555. (53)
- 2007 Chattopadhyay, S., M. Feldgarden, **D. E. Dykhuizen**, G. van Belle, E. V. Sokurenko, "Haplotype diversity in 'source-sink' dynamics of *Escherichia coli* Urovirulence." **J. Mol. Evol.** 64:204-214. (20)
- 2007 Chattopadhyay, S., **D. E. Dykhuizen**, E. V. Sokurenko, "ZPS: Zonal Phylogeny to visualize adaptive evolution of proteins through single nucleotide polymorphisms." **BMC Bioinformatics** 8:Art.#187. (12)
- 2007 **Dykhuizen, D. E.**, A. Kalia, The Population Structure of Pathogenic Bacteria. In (Stearns, S.C. & Koella, J.K., eds.) **Evolution in Health and Disease** (2nd Ed.). Oxford University Press, Oxford. Pp 185-198. (2)

- 2007 Korotkova, N., S. Chattopadhyay, T.A.Tabata, V. Beskhlebnaya, V. Vigdorovich, B.K. Kaiser, R.K. Strong, **D.E. Dykhuizen**, E.V. Sokurenko, and S.L. Moseley. Selection for Functional Diversity Drives Accumulation of Point Mutations in Dr Adhesins of *Escherichia coli*. **Mol. Microbiol.** 64:180-194. **(19)**
- 2008 Brisson, D., **D. E. Dykhuizen**, R. S. Ostfeld, "Conspicuous impacts of inconspicuous hosts on the Lyme disease epidemic." **Proc. Roy. Soc. B** 275:227-235. Featured in ScienceNOW Daily News, November 21, 2007. **(70)**
- 2008 Stoebel, D. M., A. M. Dean, **D.E. Dykhuizen**, "The cost of expression of *Escherichia coli lac* operon proteins is in the process, not the products." **Genetics** 178:1653-1660. **(73)**
- 2008 **Dykhuizen, D. E.**, D. Brisson, S. Sandigursky, G. P. Wormser, J. Nowakowski, R. B. Nadelman, and I. Schwartz. "The propensity of different *Borrelia burgdorferi sensu stricto* genotypes to cause disseminated infections in humans." **Am. J. Tropical Med Hygiene** 78:806-810. **(40)**
- 2009 **Dykhuizen, D. E.**, and I. N. Wang. "Animal foraging meets viruses." **Evol. Ecol. Res.** <http://www.evolutionary-ecology.com/data/2353.pdf>.
- 2009 Chattopadhyay, S., S. J. Weissman, V. N. Minin, T. A. Russo, **D. E. Dykhuizen**, E. V. Sokurenko. "High Frequency of Hotspot Mutations in Core Genes of *Escherichia coli* due to Short-Term Positive Selection. **Proc. Natl. Acad. Sci. USA** 106:12412-12417. **(27)**
- 2009 Chattopadhyay, S., R. N. Paranjpye, **D. E. Dykhuizen**, E. V. Sokurenko, M. S. Strom. "Comparative evolutionary analysis of the major structural subunit of *Vibrio vulnificus* type IV pili." **Mol. Bio. Evol.** 26:2185-2196. **(9)**
- 2009 **Dykhuizen, D. E.**, A. M. Dean. "Experimental evolution from the bottom up". In (T. Garland Jr, M. R. Rose, eds.) *Experimental Evolution: Concepts, Methods, and Applications of Selection Experiments*. University of California Press. Pp 67-87. **(8)**

- 2009 Zhong, S., S. P. Miller, **D. E. Dykhuizen**, A. M. Dean. "Transcription, Translation, and the Evolution of Specialists and Generalists." **Mol. Biol. Evol.** 26:2661-2678. (9)
- 2010 **Dykhuizen, D. E.**, D. Brisson. "Evolutionary genetics of *Borrelia burgdorferi sensu lato*." In (ed. D. S. Samuels and J. D. Radolf) *Borrelia: Molecular Biology, Host Interaction and Pathogenesis*. Caister Academic Press, Portland OR, pp215-243. (4)
- 2010 Brisson, D., M. F. Vandermause, J. K. Meece, K. D. Reed, **D. E. Dykhuizen**. "Evolution of Northeastern and Midwestern *Borrelia burgdorferi*, United States." **Emerging Infectious Diseases** 16:911-917. (11)
- 2010 Stoebel, D. M., **D. E. Dykhuizen** "Waste and yet want not." **Mol. Cell** 38:625-6. (1)
- 2010 **Dykhuizen, D. E.** "The potential for microorganisms and and experimental studies in evolutionary biology." In: M. A. Bell, D. J. Futuyma, W. F. Eanes, and J. S. Levinton (eds.), *Evolution Since Darwin: The First 150 Years*. Sinauer, Sunderland, MA. Pp167-173.
- 2012 Humphrey, P. T., D. A. Caporale, **D. E. Dykhuizen**, D. Brisson. "Uncoordinated phylogeography of *Borrelia burgdorferi* and its tick vector, *Ixodes scapularis*." **Evolution** in press.
- 2012 Weissman, S., J. Johnson, V. Tchesnokova, M. Billig, **D. Dykhuizen**, K. Riddell, P. Rogers, X. Qin, S. Butler-Wu, B. T. Cookson, F. C. Fang, D. Scholes, S. Chattopadhyay, E. Sokurenko,. "High-Resolution Two-Locus Clonal Typing of Extraintestinal Pathogenic *Escherichia coli*." **Appl. Envir. Microbiol.** 78:1353-1360. (7)
- 2013 Chattopadhyay, S., S. Paul, D. E. Dykhuizen, E. V. Sokurenko, "Tracking recent adaptive evolution in microbial species using TimeZone." **Nature Protocols** 8:652-665. (1)
- 2013 Monzon, J., R. Kays, **D. E. Dykhuizen**, "Assessment of coyote-wolf-dog admixture using ancestry-informative diagnostic SNPs"

Appendix 2 Featured Speaker

- 1984 "Chemostats as Tools for Experimental Studies of Evolution." **Society for the Study of Evolution Symposium: Microevolution in Prokaryotes and Eukaryotes.** Crested Butte, CO.
- 1985 "The Nature and Measurement of Selection in Continuous Culture Populations of Bacteria." **Gordon Conference: The Population Biology and Evolution of Microbes and Their Accessory Elements.** Meriden, NH.
- 1986 "Recombination and Clonality in *Escherichia coli*." 8th **International Colloquium on Laboratory Methods for Epidemiologica Surveillance.** Wermigerode, German Democratic Republic.
- 1987 "The Importance of Horizontal Gene Exchange in Maintaining *E. coli* as a Separate Species." **Gordon Conference: Population Biology and Evolution of Microbes and Their Accessory Elements.** Plymouth, NH.
- 1988 "Bacteria as Model Systems for Experimental Studies of Microevolution." **Woods Hole Marine Biology Laboratory Workshop, Molecular Evolution.** Woods Hole, MA
- 1991 "The Role of Experimental Molecular Evolutionary Biology in the Understanding Selection and Stability in Ecosystems." **Department of Energy Workshop: Molecularly Assisted System Ecology Research.** Asilomar, CA.
- 1991 "Effect of Evolutionary Processes on the Function of Microbial Communities." **Michigan State Symposium: Microbial Community Structure: Concepts and Principles.** East Lansing, MI.
- 1991 "Influence of Environment on Selection." **Gordon Conference: The Population Biology and Evolution of Microbes and Their Accessory Elements.** Plymouth, NH.
- 1992 "Population Genetics and Experimental Evolution." **UCR Arrowhead Genetics Conference, Keynote speaker.** Riverside, CA.
- 1992 "Recombination and Species in Bacteria." **American Society for Microbiology Symposium: Experimental Studies in Population Genetics and Evolution.** New Orleans, LA.
- 1992 "Gene variability, clonality and recombination within *Escherichia coli*." **First International *E. coli* Genome Meeting,** University of Wisconsin, Madison, WI.

- 1992 "Analysis of Gene Sequences for Studying Evolution of Microorganisms." **Department of Energy Workshop: Evolutionary Clocks**, Subsurface Science Program. Washington, D.C.
- 1993 "Genetic Diversity and Clonality." **Banbury Center Conference: Molecular and Immunologic Aspects of Lyme Disease**. Cold Spring Harbor, NY.
- 1993 "One Disease, One Pathogen: One Disease, Multiple Pathogens?" **Infectious Diseases Society of America Symposium: Lyme Disease: Are the Answers in Sight?**. New Orleans, LA
- 1994 "Population Genetics and Infectious Disease: Clonality of *Borellia burgdorferi*." **Gordon Conference on the Biology of Spirochetes**. Ventura, CA
- 1995 "Natural Selection and the Single Gene." **52nd Symposium of the Society for General Microbiology**, Leichester, England.
- 1995 "Experimental Investigation of the Molecular Causes of Natural Selection." **Society for the Study of Evolution Symposium: Molecular Mechanisms of Evolutionary Adaptation**, Montreal, Canada.
- 1995 "Pathogenesis and Genetic Transfer Between Bacteria." **Joy Goodwin Distinguished Lecturer**, Auburn University, Auburn AL.
- 1996 "Homage to Santa Rosalia: Why are There So Many Species of Bacteria?" **Symposium on Bacterial Genetics and Ecology**, BAGECO V, Nafplion, Greece.
- 1996 "The Paradox of Clonality at Some Genes and Recombination at Other as Illustrated in *Borellia burgdorferi*." **International Workshop on Molecular Epidemiology and Evolutionary Genetics of Pathogenic Microorganisms**, Atlanta, GA.
- 1996 "Experimental Evolution of Metabolism in Bacteria." **Fifth International Congress of Systematic and Evolutionary Biology**, Budapest, Hungary.
- 1997 "Genetic variation within local populations of *Borellia burgdorferi*." **10th Annual International Scientific**

Conference on Lyme Disease and Other Tick-borne Disorders, Bethesda, MA.

- 1997 "The Lyme disease agent as a stealth pathogen." **Gordon Conference**: Microbial Population Biology. Plymouth, NH.
- 1998 "The waiting game of the Lyme spirochete." **American Society for Microbiology**, Atlanta, GA
- 1998 "Experimental evolution and population genetics." **Fukoda Internation Symposium of Population Gentic**s, Fukoda, Japan.
- 1999 "How Lyme *Borrelia* is different from the pathogens most everyone studies." **Gordon Conference**: Molecular Evolution. Hayama, Japan.
- 2001 "Evolution of Specialists and Generalists" **Gordon Conference**: Microbial Population Biology. Willamston, MA.
- 2002 "Species: Convenient category or biological reality." **American Society for Microbiology**, Salt Lake City, UT
- 2002 "Evolution of new pathogens" **Molecular Evolution**, Sorrento, Italy.
- 2003 "Species Numbers in Bacteria." **California Academy of Sciences**, San Francisco, CA.
- 2004 "Frequencies of OspC clones in *Borrelia burgdorferi* are determined by density of host species." **Gordon Conference**: Biology of Spirochetes. Ventura, CA.
- 2004 "Distribution of homoplasy in *E. coli* DNA sequences suggests mutational hotspots are common in nature." **Gordon Conference**: Mutagenesis. Oxford, England.
- 2006 "Source-sink dynamics of virulence evolution." **American Society for Microbiology**, Orlando, FL.
- 2007 "Tippiness in phylogenetic analysis." **Banbury Center**: Microbial Forensics: Enduring research Pathways, Cold Spring Harbor, NY.

Appendix 3 Grants

- 1978-1981** "Experimental Test of Allozyme Neutrality", PHS (NIH) grant #GM24886 for \$130,500.
- 1981-1986** "Genetic Basis of Selection in Natural Populations", PHS (NIH) grant #GM30201 for \$502,745.
- 1986-1991** Competitive Renewal of "Genetic Basis of Selection in Natural Populations", PHS (NIH) grant #GM30201 for \$1,065,201. Shared with D. L. Hartl.
- 1987-1993** "Fitness as a Function of Enzyme Activity", NSF grant #BSR8796321 for \$147,000.
- 1994-1998** "Rapid and Specific Diagnosis of Lyme Disease", CDC grant #U50/CCU 206608, B. J. Luft, PI, for \$450,000.
- 1996-2000** "A Molecular Investigation of Trade-Offs and Evolutionary Stability in a Simple Competitive Ecosystem", NSF grant DEB9616190 for \$240,000.
- 1997-2002** "Neurological Aspects of Lyme Disease in North America: Pathogenesis of Neurologic Lyme Disease", PHS (NIH) grant #5P01NS34092/Project 1, B. Luft, PI, for \$500,000.
- 2000-2004** "An Evolutionary Analysis of Fimbriae in Enterobacteria", PHS (NIH) grant #GM60731 for \$856,594. Shared with Evgueni Sokourenko.
- 2001-2005** "Evolution of Specialists and Generalists", PHS (NIH) grant #GM63800, A. M. Dean, PI. Subcontract for \$160,000.
- 2004-2010** Competitive renewal of "An Evolutionary Analysis of Fimbriae in Enterobacteria", PHS (NIH) grant #GM60731, competitive renewal, for \$1,552,509. Shared with Evgeni Sokourenko and James Johnston.
- 2009-2012** "Pathoadaptive Evolution in Salmonella" PHS (NIH) grant #GM52277 for \$91,200. Subcontract from University of Washington, Seattle, Evgeni Sokourenko, PI

Appendix 4 Teaching

1. Courses Offered.

Invertebrate Zoology, Undergraduate, 1969.
 Evolution and Society, Undergraduate non-majors, 1988-96, 2000-5, 2007-10, 2012.
 Molecular Evolution, Graduate, 1989, '91, '93, '95, '97, '99.
 Evolutionary Genetics section of Genetics, Graduate, 1993-96, 1998-99.
 Evolution section of Pathogenesis, Graduate, 2000-4.
 Darwinian Medicine, Undergraduate majors, 1997-9, 2001-5, 2007-10, 2012.
 Population Genetics, Graduate, 2000, '02, '07.
 Chronic diseases and evolution, undergraduate 2006

2. Seminars Offered

Selection-Neutrality Controversy, A mini-course for the faculty of the Research School of Biological Sciences, ANU, 1974.
 Evolution and Embryology, graduate seminar, with Shozo Yokoyama, 1985.
 Molecular Evolution, graduate seminar, with Shozo Yokoyama, 1986.
 Darwinism and Neo-Darwinism, graduate seminar, 1986.
 Population Genetics of Microorganisms, graduate seminar, 1987.
 Applied Ecology, graduate seminar, with Lawrence Slobodkin, 1988.
 Special Topics in Molecular Evolution, graduate seminar, 1989.
 Bacterial Evolution, graduate seminar 1991.
 About Natural Selection, graduate seminar, with George Williams 1992.
 The Population Genetics and Evolution of Infectious Diseases, graduate seminar 1996
 Experimental Evolution of Bacteria and their Viruses, graduate seminar 2011
 6 ESAC (Entering Graduate Students Committee) Seminars 97-00,02,08

3. Research or independent reading.

a. Faculty

Tendi Mutangadura-Mhlanga, 1986-87 Department of Biological Sciences, University of Zimbabwe.

b. Post Doctoral Fellows

Raymond Miller, 1982-85.
 Ralph Evans, 1990.
 Riitta Mikkola, 1992-3.
 Michael Feldgarden, 2000-5.
 Shain-Ren Liou, 2001-3
 Nickolas Friedenbergl, 2007-10

c. Graduate Students

Antony Dean, 1982-86.
 Eric Routman, 1983-84.
 Robert DuBose, 1984-87.

Jeffrey Lawrence, 1986-87.
 Pedro J. N. Silva, 1987-1992.
 Junhyong Kim, 1988-91
 Dave Guttman, 1989-94
 Stephan S. McCafferty, 1990-93
 Ing-Nang Wang, 1991-98
 Wie-Gang Qiu, 1993-99
 Patricia Escobar-Paramo, 1995-99
 Gregory Ugine, 1995-96
 Nicole Valenzuela, 1996-99
 Trista Wagoner, 1997-99
 Erin Vogel, 1998-2001
 Daniel Stoebel, 2000-2005
 Dustin Brisson, 2000-2006
 Michelle Turner, 2003-5
 Christopher Jensen, 2003-2007
 Sarah Gray, 2008-2011
 Emily Thompson, 2008

d. Undergraduate Students

Maxine Davies, Research Project and Thesis, 1975.
 Christopher Cervantes, Research Project and Thesis,
 1982-1983
 David Wolczyk, Summer Fellowship student from Reed
 College, 1985.
 Joseph M. Venezia, Research Project, 1988.
 Anthony W. Castellano, Research Project, 1988.
 Danielle Morias, Directed Reading, Spring 1989.
 Adrian Banc, Research Project, Spring 1989.
 Jesse Reichler, Research Project, Spring 1990
 Anthony Forti, Research Project, Spring 1991
 Chetan Sawhney, Research Project, Spring 1991
 Glenn C. Roiland, Research Project, Fall 1993
 Jin Li, Biochemistry Honors Thesis, 1996-1997
 Michael Acosta, Research, 1998-1999
 Gregory Heinz, Research Project, Spring 2002
 Arielle Herzfeld, Research, Spring 2003
 Brandon Bell, Summer Research, 2003
 Andrea Love, Honors Research, 2008-2009
 Louis Zito, Research Project, 2008-2009
 Bobbin Chakyayil, Research Project, 2009-2010
 Christian Rocanova, Research project, 2011-2012
 Muhaimin Rahman, Fall 2012
 Dannah Rae Sajorda, Research, 2013-2014

e. High School Students

Benjamin Kirkup-Westinghouse Semi-finalist, 1993.
 Tania Mucci - Intel Semi-finalist, 1999
 Jiji Gu - Summer 2002
 Tovah Markowitz - Simon Fellow, Summer 2002
 Naomi So - Summer 2002
 Kevin Tong - Summer 2005

Brian Bober - Summer 2005

3. Graduate Student Committees (Ph.D.)

a. Washington University in St. Louis

David S. Haymer	James W. Jacobson
Antony Dean	David T. Burke
Robert DuBose	Glenn Bryan

b. University of Stony Brook

Pedro J. N. Silva	Cedric Wesley
Junhyong Kim	Maureen Krause
Stephan Sean McCafferty	Sanghoon Lee (Marine Sciences)
Gabriel Moreno	Dave Guttman
Joanne Labate	Paul Neal
Lisa Rigney	Michael McCartney
Curt Nasser (Philosophy)	Christiane Bierman
Nicole Valenzuela	Patricia Escobar-Paramo
Ing-Nang Wang	Brian Verrelli
Wei-Gang Qiu	Ehab Abouheif
Emily Knott	Luciano M. Matzkin
Waleed AlGharaibeh	Joe Ward
Andre Coelho Levy	Efe Sezgin
Craig B. Laramee (Biomedical Engineering)	
Janos Hajagos	Dustin Brisson
Daniel Stoebel	Christopher Jensen
Sarah Grey	J. Khai Tran
Joe Lachance (Genetics)	Matthew Aiello-Lammens
Carolina Ulloa	Javier Monzon
Rebecca Grella	Caitlin Karanewsky
Omar Warsi	Dana Optulenta
Spencer Koury	John Waldron
Gena Sbeglia	Fabrizio Spagnolo
Mica McCartyGlenn	

c. Other Universities

Riitta Mikkola (Opponent, University of Uppsala)
 Yin Tan (Yale Universtiy)
 Gowrie Thampapillai (Outside reader, Univesity of Sydney)
 Ionel Mitrica (Wesleyan University)
 Gulta M. Pupo (Outside Reader, University of Syndey)
 Margie Kinnersley (University of Montana)
 Annika Nilsson (Opponent, Karolinska Institute)
 James Carpino (CUNY Queens College)
 Zhenmao Wan (CUNY Hunter College)

Appendix 5 Professional Service

1. Meeting Organizer

Chair, Gordon Conference on Microbial Population Biology, 1995
 Co-chair, Gordon Conference on Microbial Population Biology, 1987
 Co-chair, Gordon Conference on Microbial Population Biology, 1991
 Symposium on Experimental Studies in Population Genetics and Evolution, American Society for Microbiology, New Orleans, 1992
 Symposium on Molecular Evolution of Infectious Diseases, Molecular Evolution, Sorrento, Italy, 2002
 Workshop on Molecular Epidemiology of Bacteria and Viruses, Evolution of Infectious Diseases, Bethesda, MD, 2002
 Symposium on Emerged Emerging Pathogens, American Society for Microbiology, Washington DC, 2003
 Symposium on Pathoadaptive Evolution: Gene loss and mutation in bacterial pathogens, American Society for Microbiology, Orlando, FL, 2006

2. Editorships

Editor of *Genetica* -- 1990-92
 Editor of *Molecular Phylogenetics and Evolution* -- 1992-98
 Editor of *Journal of Bacteriology* -- 1992-94
 Book Review Consultant for *The Quarterly Review of Biology* -- 1991-2002
 Editor of *Quarterly Review of Biology* - 2002-2005, 2007-2010
 Editor in Chief of *Quarterly Review of Biology* - 2010-
 Editorial Board of *Infection, Genetics and Evolution* - 2002-
 Assistant Editor, *PLOS Pathogenesis* - 2007-2010
 Associate Editor, *Journal of Evolutionary Medicine* - 2012-2015

3. Society Offices and Committees

Chair-elect (2001-2), chair (2002-3), advisor (2003-4)
 Section R, ASM.
 Nomination Committee, SMBE (2003)
 William A. Hinton Research Training Award Selection Committee, AAM (2003-2006)

4. Grant Panels

NSF Population Biology, 1993
 DOE Subsurface Science Program, 1993
 NSF Graduate Research Fellowships, 1995-6, 1999
 NIH Genetics, 1996, 1997, 2004
 NIH Special Panels, 1998-2000
 NIH Biomedical Technology, 2000
 NIH Genomics, 2000

NIH Bacteriology and Mycology I, 2003
 NIH Genetic Variation and Evolution, permanent member,
 2004-8, 2010.

5. Reviewing

a. I have reviewed manuscripts for the following publications:

Science,
 Nature,
 Nature Genetics,
 American Zoologist,
 Applied Microbiology and Biotechnology,
 Bio-complexity,
 Biotechnology and Bioengineering,
 BMC Evolutionary Biology
 Comparative Biochemistry and Physiology,
 Ecology,
 Evolution,
 Environmental Microbiology,
 Gene,
 Genetics,
 Genetical Research,
 Genome Research
 Infection, Genetics and Evolution,
 Journal of Bacteriology,
 Journal of Clinical Microbiology,
 Journal of Molecular Evolution,
 Journal of Heredity,
 Molecular Biology and Evolution,
 Molecular Microbiology,
 Microbial Ecology,
 Microbiology,
 Molecular Ecology,
 Molecular Phylogenetics and Evolution,
 Plasmid,
 PLoS One,
 PLoS Biology,
 PLoS Computational Biology
 PLoS Genetics,
 PLoS Pathogen,
 Proceedings of the Royal Society,
 Proceedings of the National Academy Sciences,
 New York Times,
 Systematic Biology,
 Theoretical Population Biology
 Trends in Microbiology,
 Trends in Ecology and Evolution.

b. I have reviewed grants for the following agencies:

National Science Foundation (Population Biology and
 Physiological Ecology, Ecology, Genetic Biology,

Biotechnology, Systematics, Population Biology and Systematics),
Environmental Protection Agency,
National Institutes of Health (Genetics, Genomics, Medical Technology, Genetic Variation and Evolution),
Department Of Energy (Subsurface Program),
Australian Research Council,
Idaho Board of Education,
Research Council of Canada,
The Irish Science and Technology Agency,
The Wellcome Trust,
National Environment Research Council of United Kingdom,
Marsden Fund, Royal Society of New Zealand.

Appendix 6 University Service

1. University Committees:

1989-91 - Education and Teaching Policy Committee.
 1991-92 - Undergraduate Council.
 1993-96, 1999-2003 2012-2013- Arts and Sciences Senate.
 1999-2003, 2012-2013 - University Senate.
 1993 - Personal and Policy Committee.
 1998 - Graduate Council Fellowships Committee.
 1999-2000 - Administrative Review Committee
 2003-5 - CAPRA

2. Program and Department Committees:

Faculty search committee, Ecology and Evolution (1989, 1990, 1992, 1993, 1996, 2000 (chair), 2000 (chair), 2001, 2002 (chair), 2013, 2013 (Antropology)).
 Preliminary exam committee, Ecology and Evolution, (1987, 1992, 1993, 1999, 2003, 2005, 2008, 2009, 2013).
 Preliminary exam committee, Genetics, (1990, 1991, 1992, 1993, 1996).
 Admission committee, Ecology and Evolution (1993, 1995, 2000, 2005 (chair))
 Executive committee of GSEE (1988-9, 1994-98).
 Chair, Grievance Committee of GSEE, (1991-94).
 Colloquium organizer for GSEE (1992-3, 2009-2010).
 ESAC Committee (1998-9, 2001-3, 2007-8).
 Undergraduate Curriculum Committee (2008)
 Committee for a new undergraduate major in Human Evolution (2008-9)
 Strategic aims committee (2010)
 E&E Retreat organizer (2013)