

David M. Rand - Curriculum Vitae

December 2008

PERSONAL:

Date of Birth: 13 November 1956
Place of birth: Cambridge, Massachusetts
Address: Department of Ecology and Evolutionary Biology,
Box G-W, Brown University,
Providence, RI 02912;
Ph: (401) 863-2890 (off.), -1063 (lab); FAX: 401 863-2166;
E-mail: David_Rand@brown.edu
Home address: 67 Annawamscutt Rd., Barrington, RI 02806 Phone: (401) 245-0492

EDUCATION:

9/83-8/87 Yale University, Department of Biology, Ph. D. September 1987.
9/75-6/80 Harvard College, B. A., Biology, *cum laude*, June 1980.
9/74-6/75 Northfield Mt. Heron School, Northfield, MA
9/71-6/74 Lincoln-Sudbury Regional High School, Sudbury, MA

RESEARCH INTERESTS

Molecular population genetics, comparative genomics and evolution; coevolution of nuclear and mitochondrial genomes; mitochondrial aging; genomics of thermal selection; case studies with *Drosophila*; barnacles, and *Fundulus*

PROFESSIONAL EXPERIENCE:

7/03-present Professor of Biology, Brown University, Providence, RI
7/97-6/03 Associate Professor of Biology, Brown University, Providence, RI
7/91-6/97 Assistant Professor of Biology, Brown University, Providence, RI
1/91-6/91 Adjunct Assistant Professor of Biology, Brown University, Providence RI
1/88-6/91 Postdoctoral Fellow, Population Genetics, Museum of Comparative
Zoology Laboratories, Harvard University
9/87-12/87 Postdoctoral Fellow, Institute of Marine Biology, Department of Biology,
University of Crete, Greece
9/83-6/86 Teaching Assistant, Yale University
9/81-6/83 Biology and Mathematics Teacher, St. Albans School, Washington, D. C.
9/80-6/81 Teaching Fellow in Biology, Phillips Academy, Andover, MA
1979, 1980 Research Assistant, Homing Pigeon Navigation, Dr. Charles Walcott,
SUNY, Stony Brook, (summers).
1977, 1978 Research Assistant, Seabird Ecology Study, Nome, Alaska, Dr. William
H. Drury, NOAA, (summers and fall semester '78).

GRANTS AND FELLOWSHIPS:

"Nuclear-Mitochondrial Fitness Interactions in *Drosophila*", NIH General Medicine,
2R01GM067862, \$1,267,400, 8/01/08 – 7/31/12, Dr. David Rand, PI.

"Evolutionary Response to Nanomaterial Exposure in the Environment: Functional
Genomics of C60-Resistance in *Drosophila*", Brown University Seed Fund
Program, \$55,000, P.I. D.M Rand, with K. Wharton (MCB) and R. Hurt
(Engineering).

"Rhode Island EPSCoR: Catalyzing a Research, Education and Innovation Network"

NSF EPS 05-54548, \$6,750,000, 7/06 – 6/09, Dr. Jeff Seeman, URI, P.I. Dr. D. Rand, Brown University Graduate Director (\$375,000 in graduate fellowships)

“Nuclear-mitochondrial fitness interactions in *Drosophila*”, NIH General Medicine, R01 GM067862, \$1,095,301, 8/01/04 – 7/31/08, Dr. David Rand, PI; Dr. Bill Ballard, co Investigator.

“Genetic architecture of thermal selection in *Drosophila*”, NSF Population Biology, DEB 0343464, \$536,000, 3/01/04 – 2/28/08, Collaborative Research Award with George Gilchrist at William and Mary (\$281,000 to Brown University).

“Nucleotide polymorphism in heterogeneous environments: MPI in *Semibalanus*” NSF Population Biology DEB 0108500, \$262,000, 9/1/01 – 8/31/04, Dr. David Rand, PI.

"Recombination, dominance, and selection on amino acid mutations" NSF Population Biology DEB 9981497, \$172,367, 3/1/00 - 2/28/02, Dr. David Rand, PI, Dan Weinreich, co-PI.

“Longevity and candidate gene polymorphisms in *Drosophila*”, NIH-1R01AG16632-01, \$1,505,510, 7/1/99 - 6/30-04, Dr. Marc Tatar, PI; Dr. David Rand, Co-PI.

“US-France Cooperative Research: Molecular population genetics of New World and Old World *Drosophila*” NSF International Programs INT-9815899, \$6,740, 3/1/99 - 2/29/00; \$15,460 3/01-4/03 Dr. David Rand, PI, Dr. Michel Veuille, collaborator, Univ. of Paris.

"Evolutionary dynamics of mitochondrial DNA" NSF Population Biology DEB 9707676, 9/97-8/2000, \$210,000, Dr. David Rand, PI.

"Molecular Ecological Genetics of the Acorn Barnacle" NSF Population Biology #BSR-9527709, \$215,000 Dr. David Rand, PI, Dr. Mark Bertness Co-P.I. 3/96 - 2/99.

"An Automated DNA Sequencer for Brown University" NSF Biological Instrumentation and Resources #BIR-9513001, Dr. David Rand, PI, Dr. Edward Hawrot Co-P.I. 12/95 - 11/96, \$70,000.

"Experimental Population Genetics of *Drosophila* Mitochondrial DNA", NSF Population Biology #BSR-9120293, Dr. David Rand, PI. 1/15/92 - 6/14/97, \$602,000.

"The Evolution and Maintenance of Asexuality in the Planarian *Dugesia tigrina*"(with A. Fausto-Sterling, Johanna Schmitt, Lisa Brooks), Biomedical Research Support Grant, Brown University, 7/91-6/92, \$7,000

NIH NRSA Postdoctoral Fellowship, "Population Genetics of Mitochondrial DNA Size Variation", 1988-1990, \$68,000

Grants-in-aid-of-Research, Sigma Xi, February 1986, \$500

NIH Predoctoral Training Grant in Genetics, Yale University 1984-1987

Dudley Leyland Wadsworth Fellowship, Yale University, 1983-1984

GRANTS TO GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

- "Chastity in a Sexual World: The making of an unselfish genome" NSF Doctoral Dissertation Improvement Grant awardee Bruce Bryan, 5/07 – 4/09, \$12,000.
- "Drosophila energetics and mitonuclear function" NIH NRSA Kristi Montooth awardee, D. Rand PI, 3/1/06 – 2/28/09, \$132,000
- The evolution of gene expression in Drosophila" NIH NRSA, Colin Meiklejohn awardee, D. Rand PI, 1/1/05 – 12/31/08, \$132,000
- "Population connectivity and the origins of genetic diversity in the Mummichog, Fundulus heteroclitis, NOAA-NERR Grant to Robert Haney, 07/04-06/06, \$40,000
- "From Parasite to Mutualist: Wolbachia in Drosophila" NSF Dissertation Improvement Grant to Adam Fry, 5/01/01 – 4/30/02, \$5840.
- "The Mechanism of Selection at the MPI polymorphism in the Northern Acorn Barnacle" NSF Dissertation Improvement Grant to Paul R. Schmidt, 6/1/98 - 5/31/99, \$5720.
- "The Evolutionary Impact of Natural Selection, Quantitative Genetic Variation, and Gene Flow in a Salt Marsh Perennial, *Limonium carolineanum*. NSF Population Biology, Dissertation Improvement Grant for Matthew B. Hamilton, with Johanna Schmitt, 7/92 - 6/95, \$12,000

GRANT PROPOSALS PENDING

- "Mitochondrial genetics of aging in Drosophila", NIH-NIA, resubmission submitted 3/08, \$1,900,000, 12/01/08 – 11/30/13, Dr. David Rand, PI

PUBLICATIONS IN JOURNALS (undergraduate Co-Authors are underlined)

- Rand, D. M.** and G. V. Lauder, Jr. 1981. Prey capture in the chain pickerel (*Esox niger*): correlations between feeding and locomotor behavior. *Can. J. Zool.* 59:1072-1078.
- Harrison, R.G., **D. M. Rand** and W. C. Wheeler. 1985. Mitochondrial DNA size variation within individual crickets. *Science* 228:1446-1448.
- Rand, D. M.** and R. G. Harrison. 1986. Mitochondrial DNA transmission genetics in crickets. *Genetics* 114:955-970.
- Harrison, R. G., **D. M. Rand** and W. C. Wheeler. 1987. Mitochondrial DNA variation across a narrow hybrid zone. *Mol. Biol. Evol.* 4(2):144-158.
- Rand, D. M.** and R. G. Harrison. 1989. Molecular population genetics of mtDNA size variation in crickets. *Genetics* 121:551-569.
- Rand, D. M.** and R. G. Harrison. 1989. Ecological genetics of a mosaic hybrid zone: Mitochondrial, nuclear and reproductive differentiation of crickets by soil type. *Evolution* 43:432-449.
- Arnason, E. and **D. M. Rand**. 1992. Heteroplasmy of short tandem repeats in the mitochondrial DNA of Atlantic cod, *Gadus morhua*. *Genetics* 132:211-220.

- Rand, D. M. 1992.** A dot blot hybridization method for estimating the frequencies of mitochondrial DNA haplotypes in experimental populations of *Drosophila*. *Drosophila Information Service* 71:176-180.
- Rand, D. M. 1992.** RIPping and RAPping at Berkeley. *Genetics* 132:1223-1224
- Rand, D. M. 1993.** Endotherms, ectotherms and mitochondrial genome-size variation. *Journal of Molecular Evolution* 37:281-295.
- Rand, D. M. 1994.** Thermal habit, metabolic rate and the evolution of mitochondrial DNA. *Trends in Ecology and Evolution* 9: 125-131
- Rand, D. M. 1994.** Concerted evolution and RAPping in mitochondrial VNTRs and the molecular geography of cricket populations. pp. 227-245 In: *Molecular Ecology and Evolution: Approaches and Applications*, B Schierwater, B. Streit, G. Wagner and R. DeSalle, Eds., Birkhauser Verlag
- Rand, D. M., M. L. Dorfsman** and L. M. Kann 1994 Neutral and non-neutral evolution of *Drosophila* mitochondrial DNA. *Genetics* 138: 741-756
- Hutter, C. M. and **D. M. Rand**, 1995 Competition between mitochondrial haplotypes in distinct nuclear genetic environments: *Drosophila pseudoobscura* versus *D. persimilis*. *Genetics* 140: 537-548.
- Kilpatrick, S. R. and **D. M. Rand**, 1995 Conditional hitchhiking of mitochondrial DNA: frequency shifts of *Drosophila melanogaster* mtDNA variants depend on nuclear genetic background. *Genetics* 141:1113-1124
- Rand, D. M.**, 1996 Neutrality tests of molecular markers and the connection between DNA polymorphism, demography, and conservation biology. *Conservation Biology* 10: 665-671.
- Rand, D. M.** and L. M. Kann, 1996 Excess amino acid polymorphism in mitochondrial DNA: contrasts among genes from *Drosophila*, mice, and humans. *Molecular Biology and Evolution* 13(6):735-748.
- Hamilton, M. B. and **D. M. Rand**., 1996 Relatedness estimated by oligonucleotide probe DNA fingerprints and the mating system of Sea Lavender (*Limonium carolineanum*). *Theoretical and Applied Genetics* 93: 249-256
- Datta, S., M. Kiparsky, **D. M. Rand**, and J. Arnold. 1996. A statistical test of a neutral model using the dynamics of cytonuclear disequilibria. *Genetics* 144:1985-1992
- Rand, D. M.** and L. M. Kann. 1998. Mutation and selection at silent and replacement sites in the evolution of animal mitochondrial DNA. *Genetica* 102/103: 393-407
- Kann, L. M., E. R. Rosenblum, and **D. M. Rand**. 1998. Aging, mating, and the evolution of heteroplasmy for mtDNA length variants in *Drosophila melanogaster*. *Proc. Natl. Acad. Sci.* 95:2372-2377
- Boussy, I. A., I. Masanobu, **D. Rand**, and R. C. Woodruff. 1998. Decay of the eastern

Australian latitudinal cline of *P* element-associated properties in *Drosophila melanogaster* populations, and a test of the cline's origins. *Genetica* 140:45-57

- Schmidt, P. S. and **D. M. Rand**. 1999. Intertidal microhabitat and selection at MPI: Interlocus contrasts in the northern acorn barnacle. *Evolution* 53:135-146.
- Schmidt, P. S. M. D. Bertness, and **D. M. Rand** 2000. Environmental heterogeneity and balancing selection in the northern acorn barnacle. *Proc. Roy. Soc. London, B* 267:379-384.
- Weinreich, D. M. and **D. M. Rand**, 2000. Contrasting patterns of non-neutral evolution in proteins encoded in nuclear and mitochondrial genomes. *Genetics* 2000 156: 385-399.
- Rand, D. M.**, D. M. Weinreich, and B. O Cezairliyan. 2000. Neutrality tests of conservative and radical amino acid changes in nuclear- and mitochondrially-encoded proteins. *Gene* 291:115-125.
- Brown, A. F. L. M. Kann and **D. M. Rand**, 2001. Gene flow versus local adaptation in the Northern acorn barnacle, *Semibalanus balanoides*: insights from mtDNA control regions polymorphisms. *Evolution* 55: 1972–1979.
- Rand, D. M.** 2001. Mitochondrial genomics flies high. *Trends in Ecology and Evolution* 16:2-4
- Rand, D. M.** 2001. The units of selection on mitochondrial DNA. *Annual Review of Ecology and Systematics* 32: 415-448.
- Rand, D. M.**, A. G. Clark, and L. M. Kann 2001. Sexually antagonistic cytonuclear fitness interactions in *Drosophila melanogaster*. *Genetics* 2001 159: 173-187.
- Schmidt, P. S., and **D. M. Rand**. 2001 Adaptive maintenance of genetic polymorphism in an intertidal barnacle: Habitat and life history stage-specific survivorship of *Mpi* genotypes. *Evolution* 55(7):1336-44.
- Tatar, M. and **D. M. Rand**. 2002. Aging: Dietary advice on Q. *Science* 295:54-55.
- Fry, A. F. and **D. M. Rand**. 2002. Wolbachia interactions that determine *Drosophila melanogaster* survival. *Evolution* 56(10): :1976-81
- Rand, D. M.**, Spaeth, P. S., Sackton, T., Schmidt, P. S. 2002. Ecological genetics of the *Mpi* and *Gpi* polymorphisms in the northern acorn barnacle and the spatial scale of neutral and non-neutral variation. *Integrative and Comparative Biology* 42:825-836.
- Kingan, S. B., M. Tatar, and **D. M. Rand**. 2003. Reduced Polymorphism in the Chimpanzee Semen Coagulating Protein, Semenogelin I. *J. Mol. Evol.* 57:159-169.
- Sackton, T. B., R. Haney, and **D. M. Rand**. 2003. Cytonuclear coadaptation in *Drosophila*: Disruptions of cytochrome c oxidase activity in backcross genotypes.

- Sheldahl, L. S., D. M. Weinreich, and **D. M. Rand**. 2003. Recombination, dominance and selection on amino acid polymorphisms in the *Drosophila* genome. *Genetics* 165: 1195-1208.
- Townsend, J. P and D. M. Rand. 2004. Mitochondrial genome size variation in New World and Old World populations of *Drosophila melanogaster*. *Heredity*, 93(1):98-103
- Fry, A.F., M. R. Palmer, and **D. M. Rand**. 2004. Variable fitness effects of Wolbachia infection in *Drosophila melanogaster*. *Heredity* 93(4):379-389.
- Comegys, M. M., S.-H. Lin, **D. M. Rand**, D. E. Britt, D. L. Flanagan, H. M. Callanan, K. Brilliant, D. C. Hixson, 2004 Two variable regions in carcinoembryonic antigen-related cell adhesion molecule1 N-terminal domains located in or next to monoclonal antibody and adhesion epitopes show evidence of recombination in rat but not in human.. *Journal of Biological Chemistry* 279(33):35063-78
- Rand, D. M.**, R. A. Haney, A. J. Fry. 2004. Cytonuclear coevolution: the genomics of cooperation. *Trends in Ecology and Evolution*, 19(12):645-653
- Ballard, J. W. O. and **D. M. Rand**. 2005. The population biology mitochondrial DNA and its phylogenetic implications. *Annual Review of Ecology, Evolution and Systematics* 36:621-642.
- Rand, D.M.** 2005. Mitochondrial genetics of aging: Inter-genomic conflict resolution. *Science* Vol. 2005, Issue 45, *Sci. Aging Knowl. Environ.*, [DOI:10.1126/sageke.2005.45.re5].
- Rand, D. M.**, A. J. Fry, and L. A. Sheldahl. 2006. Nuclear-mitochondrial epistasis and *Drosophila* aging: Introgression of *D. simulans* mtDNA alters longevity in *D. melanogaster* nuclear backgrounds. *Genetics* 172: (1):329-41
- Sanford, E., S. B. Holzman, R. A. Haney, **D. M. Rand**, M. D. Bertness. 2006. Thermal Tolerance of Larvae Regulates the Northern Geographic Range Limit of Fiddler Crabs. *Ecology* 87(11): 2882-2894.
- Folk, D. A., P. Zwollo, **D. M. Rand**, G. W. Gilchrist. 2006. Selection for knockdown performance in *Drosophila melanogaster* impacts thermotolerance and heatshock response differentially in males and females. *Journal of Experimental Biology* 209(Pt 20):3964-73.
- Haney, R. A. B. R. Silliman, A. J. Fry, C. Layman and **D. M. Rand**. 2007. The Pleistocene history of the sheepshead minnow (*Cyprinodon variegatus*): Non-equilibrium evolutionary dynamics within a diversifying species complex. *Molecular Phylogenetics and Evolution* 43(3):743-54
- Haney, R.A., B. R. Silliman and **D. M. Rand**. 2007. A multi-locus assessment of gene flow and historical demography in the bluehead wrasse (*Thalassoma bifasciatum*). *Heredity* 98(5):294-302

- Meiklejohn, C. D., Montooth, K. L. and **D. M. Rand**. 2007. Positive and negative selection on the mitochondrial genome. *Trends in Genetics* 23(6):259-63.
- Drosophila Comparative Genomics Sequencing and Analysis Consortium (141 authors including Montooth, K. L., Abt, D., **D. M. Rand**). 2007. Evolution of genes and genomes in the context of the Drosophila phylogeny. *Nature*, 450(7167):203-18.
- Rand, D. M.** 2008. Mitigating mutational meltdown in mammalian mitochondria. *PLoS Biology* 19;6(2):e35 doi:10.1371/journal.pbio.0060035
- Montooth, K. L. and **D. M. Rand**. 2008. The spectrum of mitochondrial mutations differs across species. *PLoS Biology* 6(8): e213 doi:10.1371/journal.pbio.0060213
- Schmidt, P.S., Serrão, E. A., Pearson, G. A., Riginos, C. Rawson, P.D., Hilbish, T. J., Brawley, S.H. Trussell, G.C. Carrington, E. Wethey, D.S. Grahame, J.W., Bonhomme, F. and **D.M. Rand**. 2008. Ecological genetics in the north Atlantic: environmental gradients and adaptation at specific loci. *Ecology*: 89(11):S91-S107. doi: 10.1890/07-1162.1
- Haney, R. A., Dionne, M. Puritz, J. and **Rand, D. M.** 2009. The comparative phylogeography of east coast estuarine fishes in formerly glaciated sites: persistence versus recolonization in *Cyprinodon variegatus ovinus* and *Fundulus heteroclitus macrolepidotus*. *Journal of Heredity*, *in press*
- D. M. Rand**, Cezairliyan, B. O., Alehegn, Z. and Hofmann, J. W. 2009. The human mitochondrial genome and proteome show distinct departures from neutral evolution. *Molecular Biology and Evolution*, accepted.

Manuscripts Submitted

- Montooth, K. L., Abt, D., Hofmann, J, and **D. M. Rand**. 2008. Evolution of the mitochondrial genome across twelve species of Drosophila. *Genetics*, in revision
- Wagaman, R., Hofmann, J. and **D. M. Rand**. 2008. Mitochondrial genotype modulates longevity extension by dietary restriction in Drosophila. *Aging Cell*, in revision

Manuscript drafts:

- Wagaman, R, Hofmann, J. and **D. M. Rand**. 2008. *Chico* rescues mitochondrial defects on Drosophila longevity and fecundity. To be submitted to *Aging Cell*.
- Weinreich, D. M. L. M. Kann, and **D. M. Rand**. 2008. Selection against a Zimbabwe genome in experimental populations of Drosophila melanogaster: analysis of multilocus microsatellite markers. To be submitted to *Genetics*.
- Rand, D.M.**, D. M. Weinreich, G. Gilchrist, R. Huey. 2008. Two selectiona are better than one: Thermal QTL on the X chromosome of *Drosophila melanogaster* from independent selection experiments. To be submitted to *Evolution*

D. M. Rand, L. M. Kann, M. Kiparsky, M. Siegal, P. S. Schmidt, and S. Datta. 2008. Evolution of cytonuclear genotypes in experimental populations of *Drosophila melanogaster*. To be submitted to Journal of Evolutionary Biology.

BOOK CHAPTERS

Harrison, R. G. and **D. M. Rand**. 1989. Mosaic hybrid zones and the nature of species boundaries. In: Speciation and its Consequences, edited by D. Otte and J. Endler, Sinauer Associates, Sunderland, Mass.

Zouros, E. and **D. M. Rand**. 1999. Population genetics and evolution of animal mitochondrial DNA. Chapter 23 in *Evolutionary Genetics from Molecules to Morphology*, R. Singh and C. Krimbas, Eds. Cambridge University Press.

THESES AND MONOGRAPHS

Rand, D. M. 1980. Prey Capture in the Chain Pickerel, (*Esox niger*). Undergraduate Honors Thesis, Harvard University, June 1980.

Rand, D. M. and R. A. Paynter, Jr. 1981. Ornithological Gazetteer of Uruguay. Museum of Comparative Zoology, Harvard University, iv + 75 pp.

Rand, D. M. 1987. Population Biology of Mitochondrial DNA in the Crickets *Gryllus pennsylvanicus* and *Gryllus firmus*. Ph. D. Thesis, Yale University, September 1987.

PROFESSIONAL ACTIVITIES:

President, elect American Genetics Association, 2008-2009

Memberships: Genetics Society of America, Society for the Study of Evolution, Society for Molecular Biology and Evolution, Society of Systematic Biologists

Associate Editor: Molecular Biology and Evolution, 1997-2000; 2000-2003
Genetics, 2004 – present
BioScience, 2005-present

Reviewer: *American Naturalist*, *Evolution*, *Genetics*, *Journal of Molecular Evolution*, *Molecular Biology and Evolution*, *PLoS Biology*, *PLoS Genetics*, *Nature*, *Science*, NSF Population Biology, NSF Systematics, NSF Eukaryotic Genetics, NSERC

Panel Member: NSF Population Biology 10/95, 10/97, 4/98, 4/05, NIH Program Project Advisory Panel, 7/99, NIH Special Emphasis Panel 3/05, 11/06; NIH NRSA Panel 7/06; NIH Genetic Variation and Evolution 2/2007, 10/2008-10/2011

Abstracts and papers presented at national and international meetings: (from Brown)

Rand, D. M. 1992. Endothermy, heteroplasmy and mitochondrial DNA size variation. International Conference of Molecular Evolution, Pennsylvania State University, State College, PA.

- Rand, D. M. 1992. RIPPING and RAPPING in mtDNA and the fine structure of cricket populations in southern New England, Society for the Study of Evolution/American Society of Naturalists/Society of Systematic Biologists, Annual Meeting, Berkeley CA, June 17-21, 1992
- Rand, D. M. 1993. Is mitochondrial DNA variation neutral? Tests with population cages and nucleotide sequences. Annual *Drosophila* Research Conference, San Diego, CA, March 13-April 4
- Rand, D. M. 1993. Is mitochondrial DNA variation neutral? Tests with population cages and nucleotide sequences Annual Meeting, Society for the Study of Evolution/American Society of Naturalists/Society of Systematic Biologists, Snowbird UT, June 19-23, 1993
- Rand, D. M. 1994. Non-neutral evolution of mitochondrial DNA: Evidence from cytonuclear competition experiments and nucleotide sequences. Annual *Drosophila* Research Conference, Chicago, IL, April 20-24
- Rand D. M. 1994 Non-neutral evolution of mitochondrial DNA: Evidence from cytonuclear competition experiments and nucleotide sequences. Annual Meeting, Society for the Study of Evolution/American Society of Naturalists/Society of Systematic Biologists, Athens, GA, June 15-19, 1994
- Rand, D. M., M. Kiparsky 1995. Evolution of cytonuclear genotypes in experimental populations of *Drosophila melanogaster* Annual Meeting, Society for the Study of Evolution / American Society of Naturalists / Society of Systematic Biologists, Montreal, Canada July 8-12, 1995.
- Rand, D. M. and Lisa M. Kann. 1995. Non-neutral evolution of codon usage and excess amino acid polymorphism in *Drosophila* mtDNA. Annual Meeting, Society for the Study of Evolution / American Society of Naturalists / Society of Systematic Biologists, Montreal, Canada July 8-12, 1995
- Rand D. M. and L. M. Kann. 1996. Are departures from neutrality strand-specific in *Drosophila* mitochondrial DNA? National *Drosophila* Research Conference, San Diego CA, May 1996
- Rand, D. M. and A. May. 1996. With whom should an endangered population hybridize? An experimental study with *Drosophila*, Ecological Society of America/American Society of Naturalists/Society of Conservation Biologists Meetings, Providence, RI August 1996
- Rand, D. M. and L. M. Kann. 1997. Near-neutrality or relaxed selection? Neutrality tests of amino acid polymorphism in commensal and non-commensal species; Annual Meetings of Society for the study of Evolution/American Society of Naturalists/Society of Systematic Biologists, Boulder Colorado June 1997
- L. M. Kann and D. M. Rand. 1997. A strand-bias to non-neutral mitochondrial DNA evolution: Evidence from the CytB and ND5 genes in *Drosophila*; Annual Meetings of Society for the study of Evolution/American Society of Naturalists/Society of Systematic Biologists, Boulder Colorado June 1997

- P. R. Schmidt and D. M. Rand. 1997. Balancing selection at the MPI locus in *Semibalanus balanoides*. Annual Meetings of the Society for the study of Evolution/American Society of Naturalists/Society of Systematic Biologists, Boulder Colorado June 1997
- Rand, D. M and P. R. Schmidt. 1998. Group sex in the acorn barnacle: paternity analyses using microsatellite markers. Benthic Ecology Meetings, Melbourne Florida, 12-15 March 1998.
- Rand, D. M., and L. M. Kann. 1998. Sex chromosome - cytoplasm fitness interaction in *Drosophila*. Annual Meeting, Society for the Study of Evolution / American Society of Naturalists / Society of Systematic Biologists, Vancouver, BC, June 1998.
- Rand, D. M. 1999. Departures from Neutrality are different for nuclear and mitochondrial genes. 40th Annual *Drosophila* Research Conference, Seattle WA, 24-28 March 1999
- Rand, D.M. and D. M. Weinreich. 1999. Neutrality, selection and the evolution of protein-coding DNA: the importance of the distribution of selection coefficients. VIIIth European Society of Evolutionary Biology Congress, Barcelona, Spain, Aug 1999
- Rand, D.M., D.M. Weinreich, and L. M. Kann. 2000 Selection against a Zimbabwe genome in experimental populations of *Drosophila melanogaster*. 41st Annual *Drosophila* Research Conference, Pittsburgh, PA, 22-26 March;
- Rand, D.M., A.J. Fry, and L. DiChiaro. 2000. Experimental evolution of the G-matrix: changes in wing shape between hot- and cold-selected populations of *D. melanogaster*. Annual Meetings of the Society for the Study of Evolution / American Society of Naturalists / Society of Systematic Biologists, Bloomington Indiana, June 2000.
- Rand, D.M., D. M. Weinreich, G. Gilchrist, R. Huey 2001. Genomics of thermal selection in experimental populations of *Drosophila melanogaster*. Annual Meetings of the Society for the Study of Evolution / American Society of Naturalists / Society of Systematic Biologists, Knoxville Tennessee, June 2001.
- Rand, D.M., D. M. Weinreich, G. Gilchrist, R. Huey 2001. Large X-chromosome effect in response to thermal selection in experimental populations of *Drosophila melanogaster* 42rd Annual *Drosophila* Research Conference, Washington, D.C., March 2001.
- Rand, D. M., Spaeth, P. S., Sackton, T., Schmidt, P. S. 2002. Ecological genetics of the *Mpi* and *Gpi* polymorphisms in the northern acorn barnacle and the spatial scale of neutral and non-neutral variation. Society for Integrative and Comparative Biology, Anaheim, CA, Jan.2002
- Rand, D.M, R.Haney, T. B. Sackton, and L. S. Sheldahl, 2003. Cytonuclear coevolution: fitness consequences of mtDNA introgression from *D. simulans* to *D. melanogaster*. Annual Meetings of the Society for the Study of Evolution /

American Society of Naturalists / Society of Systematic Biologists, Chico, California, June 2003.

Rand, D. M., B. O Cezairliyan, 2004. Human mitochondrial genome and proteome show opposing departures from neutral evolution. Genomes and Evolution, Annual Meeting of the Society of Molecular Biology and Evolution, Penn State University, June 2004.

Rand, D. M. M. Palmer, D. M. Weinreich, G. C. Gilchrist. 2004 Clinal analysis of a thermal QTL. Annual Meeting of the Society for the Study of Evolution / American Society of Naturalists / Society of Systematic Biologists, Fort Collins, CO, June 2004.

Rand, D.M., R. Haney, J. Kanefsky, R. Wagaman, L. Nicolaidis, 2005. Evolution of nuclear mitochondrial interactions in *Drosophila*. 46th *Drosophila* Research Conference, San Diego, CA, March 2005

Rand, DM, C. Meiklejohn, D. Folk, G. Gilchrist. 2005. Clinal analysis of a thermal QTL in *Drosophila*. Annual Meeting of the Society for the Study of Evolution / American Society of Naturalists / Society of Systematic Biologists, Fairbanks, Alaska June 2005

Rand, DM, C. Meiklejohn, D. Folk, R. Hopkins, D. Solomon, G. Gilchrist. 2006. Population genetic analyses of a thermal QTL in natural and experimental populations of *Drosophila melanogaster*, 47th *Drosophila* Research Conference, Houston, TX, March 2006

Rand, D. M., Wagaman, R, Hofmann, J. W. Mitochondrial genotype alters longevity in *Drosophila*. Annual Meeting of the Society for the Study of Evolution / American Society of Naturalists / Society of Systematic Biologists, Stony Brook, NY, June 2006

Rand, D. M. Wagaman, R, Hofmann, J. W. *chico* rescues mitochondrial defects in *Drosophila* longevity extension under dietary restriction. 48th *Drosophila* Research Conference, Philadelphia, PA, March 2007

Rand, D.M. Meiklejohn, C. D., Folk, D., Gilchrist, G. Transcriptional profiles of high and low selection lines for the temperature knock down phenotype in *Drosophila melanogaster*. 48th *Drosophila* Research Conference, Philadelphia, PA, March 2007

Invited seminars

SUNY Stony Brook, October 1991. The units of selection on mitochondrial DNA
University of Rhode Island, The cytoplasm as a population and the evolution of mitochondrial DNA.

Yale University, 16 September 1994. "Non-neutral evolution of mitochondrial DNA:

Evidence from cytonuclear competition experiments and nucleotide sequences."

Tufts University, 21 October 1994. "Thermal habit and the departures from neutral evolution in mitochondrial DNA"

University of Chicago, 5 December 1994. "Who said mtDNA is neutral? Insights from

competition studies and nucleotide sequences."

University of Massachusetts, 31 March 1995. "Who said mtDNA is neutral? Insights from competition studies and nucleotide sequences."

Gordon Conference on Bioenergetics Proctor Academy 2-7 July 1995. "Metabolic Rate, Thermal habit and the evolution of mitochondrial DNA."

Rutgers University, 28 September 1995. "Who said mtDNA is neutral? Insights from cytonuclear competition experiments and nucleotide sequences."

University of Georgia, 25 October 1995. "Who said mtDNA is neutral? Insights from cytonuclear competition experiments and nucleotide sequence surveys."

University of New Hampshire, 31 March 1996. "Who said mtDNA is neutral? Insights from cytonuclear competition experiments and nucleotide sequence surveys."

National Zoological Park, Washington, D.C. 31 May 1996. "Neutrality and fitness tests of mitochondrial DNA with relevance for conservation biology: How to make fruit flies interesting."

Annual Drosophila Research Conference, Chicago, IL 4/16-4/20/97 Invited participant in the Workshop on Aging, "Aging, mating and the evolution of germline heteroplasmy for mitochondrial DNA length variants in *D. melanogaster*."

Cornell University, 2 February 1998. "Selection on mitochondrial DNA and on cytonuclear interactions"

University of Pennsylvania, January 21, 1999, "Searching for selection with molecular markers: finding it in flies and barnacles"

University of Arizona, May 3, 1999, "Detecting selection with interlocus contrasts: examples from flies and barnacles"

University of Chicago, May 17, 1999 "Detecting selection with interlocus contrasts: examples from flies and barnacles"

Boston University, Nov 8, 1999 "Detecting selection with interlocus contrasts: examples from flies and barnacles"

Stazione Zoologica Anton Dohrn, Workshop on Neutralism and Selectionism: End of the debate, Ischia, Italy May 3-7 2000. "Sexually antagonistic selection and cytonuclear fitness interactions"

New England Molecular Evolutionary Biologists, Oct 14, 2000, "Genomic approaches to natural selection: from lab rat to web wienie"

Gordon Conference on Quantitative Genetics and Genomics, Feb 19-23, 2001, "Genomic and Phenomic scans of thermal selection in experimental populations of *Drosophila melanogaster*"

Marine Biological Laboratories, Woods Hole, MA, Workshop on Molecular Evolution, July 29 – August 10, 2001 "Neutrality tests of DNA sequences" and "Detecting selection using inter-locus contrasts"

Society for Integrative and Comparative Biology; Symposium on Physiological ecology of rocky intertidal organisms: from molecules to ecosystems. Anaheim CA, Jan 2002. "Thermal selection at the Mpi locus in the Northern Acorn Barnacle"

Carnegie Institution, Dept of Embryology, Baltimore MD 4 Feb 2002. "The units of selection on mitochondrial DNA"

Duke University, Dept of Biology, 4 March 2002. "Experimental genomics of thermal selection: what can flies tell us about barnacles?"

Longevity Consortium, Annapolis MD., 14 July 2002. "Mitochondrial genetics of aging in *Drosophila*"

Marine Biological Laboratories, Woods Hole, MA, Workshop on Molecular Evolution, July 29 – August 10, 2001 "Neutrality tests of DNA sequences" and "Detecting selection using inter-locus contrasts"

University of Lausanne, Switzerland, "La Sage" Meeting on Sex-specific genetic

markers, 4 September 2002. "The evolution of mtDNA: Neutrality, selection and sexual antagonism"
 University of Bern, Switzerland "Selection on genes and genomes: neutrality tests *in vivo* and *in silico*" 31 March 2003
 University of Konstanz, Germany "Functional Genomics of nuclear-mitochondrial interactions" 29 April 2003
 University of Fribourg, Switzerland "Experimental Evolution in *Drosophila*: Selection on genes and genomes" 10 June 2003.
 Harvard University, Cambridge, MA, "Mitochondrial mutations and fruitfly fitness", 16 October 2003
 Tufts University, Medford, MA, "Mitochondrial mutations and fruitfly fitness" 30 Jan 2004
 Marine Resources Center, MBL Woods Hole, MA "Ecological Genetics of the acorn barnacle" 5 Nov 2004
 University of Maine, Orono, ME "Gene flow versus local adaptation in the acorn barnacle" 5 Nov 2004
 University of Connecticut, Storrs, CT "Cytonuclear coevolution: fitness consequences of mitochondrial genome introgression in *Drosophila*" 6 Dec 2004
 University of Colorado, Boulder CO "Cytonuclear coevolution: the genomics of cooperation" 25 Feb 2005
 Marine Biological Laboratories, Woods Hole, MA "Nuclear-mitochondrial coevolution: conflict and cooperation in genomic interactions" 4 Aug 2005
 Gordon Research Conference, Ventura, CA Session Chair, Molecular Evolution Conference: "Adaptive Evolution" 5-10 Feb 2006.
 Gordon Research Conference on Molecular Evolution, elected Conference Co-Chair for 2008, Chair for 2010.
 Yale University, New Haven CT "The mitochondrial mojo of fruitfly fitness" 18 Jan 2006
 University of Massachusetts, Amherst MA, "The mitochondrial mojo of fruitfly fitness" 10 Apr 2006
 University of Washington, Seattle, WA, "Mitochondrial genetics of aging in *Drosophila*" 23 May 2006
 University of California, San Francisco, Longevity Consortium Program Project, "Mitochondrial genetics of aging in *Drosophila*" 10/2006.
 University of Wyoming. "The mitochondrial mojo of fruitfly fitness" 11/2006.
 University of California, Davis. "The mitochondrial mojo of fruitfly fitness" 11/2006.
 Cornell University, Ithaca NY. "The mitochondrial mojo of fruitfly fitness" 3/2007
 University of Washington, Symposium on Mitochondrial Evolution. "Mitonuclear coevolution, epistasis, and fitness. 6/2007
 Gordon Conference on Evolutionary and Ecological Functional Genomics, Newport RI, "Mitonuclear coevolution, epistasis and organismal function. 7/2007
 Uppsala University, Symposium on Cytonuclear Coevolution, "European Society for Evolutionary Biology, "Cytonuclear coevolution, epistasis and hybrid zones". 8/2007
 Gordon Research Conference on Molecular Evolution, Ventura CA, 2/2008, Vice Chair 2008, Chair elect 2010
 Ohio State University, "Mitonuclear coadaptation, epistasis, and fitness", 8 May 2008
 Kansas State University, "Mitonuclear coevolution, thermal selection, and fitness: when your genes are just another part of the environment 10/2008
 SUNY Stony Brook, "Running hot and cold about balancing selection: thermal selection in flies and barnacles", 12/2008

TEACHING

- Evolutionary Biology (BioMed 48), Lecture course, ~70 students
Taught single-handedly each year since 1992 (one sabbatical in 2003).
39 Lectures (50 min. each), 3 problem sets, 2 hour exams, and a final
Individual student exercises with *Drosophila* populations
Weekly discussion sections of primary literature lead by Graduate TAs
- Evolutionary Genetics (BioMed 141), Seminar and Lab course, ~20 students
Taught single-handedly every other spring semester since 1993 (not 2004).
Seminar/Lecture 2x/week for 1.5 hours, Lab 1x/week for 3 hours
5 wet-labs using molecular genetic methods, 3 computer labs using current
population genetics and phylogenetic software
5 Problem sets, 5 Lab write-ups, weekly quizzes
Final Grant Proposal in NSF-format on individual research projects developed
during the semester.
- Foundations of Living Systems (BioMed 20), Lecture course ~350 students
Lectures on Ecology and Evolution, Genomics, Spring 2008
- Graduate Seminars
Phylogenetics (1994),
Modern Synthesis (1996)
Quantitative Genetics (1998)
Phylogenetics (2001)
Environmental Genomics (2004)
Tropical Ecology (2006)
Neutral Models in Ecology and Evolution (2007)
- Guest Lectures
Genetics (BioMed 47, 154: DNA Fingerprinting and Forensic Analysis)
Bioinformatics (Statistical Methods in Bioinformatics: DNA sequences)
Neurobiology 104 Human Brain Evolution
Anthropology 173 Human Variation
- Molecular Evolution Workshop, Marine Biological Laboratories, Woods Hole, MA,
Workshop on Molecular Evolution, two lectures 2000-2007, "Neutrality tests of
DNA sequences" and "Detecting selection using inter-locus contrasts"

Postdoctoral Advisees

Lisa Kann, Ph. D. University of Rhode Island, 1993; B.A., Oberlin College, 1987
Michael R. Palmer, Ph.D. University of Kansas, 2000; B.A. Hartwick College 1995.
Daniel Weinreich, Ph.D. Harvard University, 1998; B.S. University of Michigan, 1983
Colin Meiklejohn, Ph.D. Harvard University, 2004, B.S. University of Chicago, 1999
Kristi Montooth, Ph.D. Cornell University, 2004, B.S. UC Irvine, 1999

Graduate Students

Alice Brown, Ph.D., April 1995, Brown University; "Molecular Ecology of the Northern
Acorn Barnacle, *Semibalanus balanoides*"; M.A., 1985 from Oregon State
University; B.S., 1982, Brown University.

Bruce Bryan, Ph.D. Candidate in Ecology and Evolution Brown University, expected 6/08; "Evolutionary genetics of mitochondrial function in *Drosophila* sperm". B.A. Marlboro College, 2002

Patrick Flight, Ph.D. Candidate in Ecology and Evolution, Brown University, Expected 6/11. "Environmental genomics of the acorn barnacle". B.A., Biology, Duke University.

Adam Fry, Ph.D. January 2004. Ecology and Evolution, Brown University; "Effects of Wolbachia on longevity and fecundity of *Drosophila melanogaster*"; M.S. Univ. of Minnesota, 1997. Currently Lecturer, University of Connecticut

Matthew Hamilton Ph.D., June 1995 Brown University; "Oligonucleotide Fingerprint Analysis of Neighborhood Size in the Salt March Perennial, *Limonium carolineanum*"; B.A. 1990 University of Chicago. Currently Associate Professor Georgetown University.

Robert Haney, Ph.D. in Ecology and Evolution, Brown University, 6/07; "Phylogeography of three estuarine fish in eastern North America"; BA, and M.S. 2001 SUNY Buffalo

Steve Kilpatrick Ph.D. September 1994 Brown University; "Conditional Hitchhiking of mtDNA in Experimental Populations of *Drosophila melanogaster*"; B.S., 1987 Eastern College, PA. Currently Associate Professor Univ. of Pittsburgh.

Paul Schmidt Ph.D. May 1999, Brown University; "Balancing Selection at the Mpi locus in the Northern Acorn Barnacle"; B.A. 1993 Holy Cross College. Currently Assistant Professor, University of Pennsylvania

Rebecca Wagaman, Ph.D. Candidate in Molecular Biology, Cell Biology and Biochemistry, expected 6/2007, "Mitochondrial genetics of aging in *Drosophila*"

Ph.D. Thesis Committees (other than advisees), EEB Department

Dale Ritter, 1995, Functional Morphology of the Expaxial Muscles in Lizards

Jennifer Gray, 1996, Functional morphology of flying squirrels

George Leonard, 1996, Community Ecology of the Rocky Intertidal

Shane Heschel, 2000, Quantitative Genetics of Drought Stress in Jewelweed

Pat Ewanchuck, expected 2002, Structure of Salt March Communities

Chris Siddon, expected 2003, Multiple Predator Effects in a Subtidal Community

Brian Silliman, expected 2005, Trophic Cascades in Southern Salt Marshes

Yuko Toyonaga, expected 2005, Physiological Genetics of Light Response in *Arabidopsis*

Andrew Altieri, expected 2006, Trophic Cascades of Massive Mussel Settlement

David Baier, 2005, Functional Morphology of the Avian Shoulder.

Melissa Lage, 7/2006, Microbial Diversity of Salt Marshes

Eric von Wettberg, expected 2006, Gene Duplication and Adaptive Light Responses in *Arabidopsis*

Erika Lasek-Nesslequist, expected 2009, "sex and recombination in *Giardia*, Brown/MBL Student

Alan Bergland, expected 2009, "Phenotypic plasticity for ovariole number in *Drosophila*

Ph.D. Thesis Committees, Dept of Molecular Biology, Cell Biology and Biochemistry

Andrea Nerrozzi, 1995, Chloroplast DNA Replication in *Chlamydomonas*, Annette Coleman, Advisor

Julian Wong, 2005, Biochemistry of Fertilization Envelope Formation in Sea Urchins, Gary Wessel, Advisor

Selena Gell, 2008, RNA interference and the genetics of segregation distortion in *Drosophila*, Robert Reenan, Advisor
Yuko Hasegawa, 2008, Detection of microbial samples in the environment using fluorescent probes; Mitch Sogin, Gary Borisy Advisors

Undergraduate Senior Thesis Projects

Mark Siegal, 1992, Selection on Mitochondrial DNA in Experimental Populations of *Drosophila melanogaster*; Ph.D. Harvard Univ., 1998 (HHMI Predoctoral Fellowship). Currently Assistant Professor, NYU.
Michele Dorfsman, 1993, Transmission Genetics of mtDNA in *Drosophila melanogaster*. M.D., University of Pennsylvania, 1997. Currently a Physician, Pittsburg, PA
Kristin Zvonar, RAPD Variation in the Planarian, *Dugesia trigrina*; M.D., Univ. of Pittsburgh
Jeff Townsend, 1994, Size Variation and Concerted Evolution in the mtDNA of *Drosophila melanogaster*; Ph.D. Harvard University 2002. Currently Assistant Professor, Yale University
Mike Kiparsky, 1995, Selection on Nuclear and Mitochondrial Genes in Experimental Populations of *Drosophila melanogaster*. Currently Ph.D. Candidate, UC Berkeley
Carolyn Hutter, 1995, Competition Between Distinct mtDNAs in Different Nuclear Genetic Backgrounds; M.S. Cornell, 1998. Science Education Coordinator, NYC.
Eleanor Brown, 1995, Heteroplasmy in Experimental Populations of *Drosophila melanogaster*; Law School Yale University 1998
Aaron May, 1996, With Whom Should an Endangered Population Hybridize: and Experimental Study in *Drosophila melanogaster*; Law School Stanford University, 1999
Dan Lerman, 1997, Thermal Selection in Experimental Populations of *Drosophila melanogaster*; Ph.D. University of Chicago 2003. HHMI Predoctoral Fellowship, AAAS Postdoctoral Fellowship.
Erica Rosenblum, 1997, The effect of aging and mating on the transmission of mtDNA in *Drosophila melanogaster*; Ph.D. UC Berkeley; Currently Postdoc, Lawrence Berkeley Labs.
John Morrow, 1997, Phylogeny of Gulls and Terns inferred from mtDNA Sequences; M.D. Columbia University
Ron Palmon, 1997, Computer Simulation of Selection at Multiple Levels: a Model for mtDNA Inheritance; M.D. NYU
Roger Han, 1998, Phylogeny of Gulls and Terns Inferred from CytB and 16S gene in mtDNA; M.D. Brown University
Dan Basila, 1998, Multiple Approaches to the Study of Thermal Selection in *Drosophila melanogaster*. PhD candidate UT Austin; Playwright
Andy Kern, 1999, Spatial and Temporal Variation in Microsatellite Frequencies in the Northern Acorn Barnacle. Ph.D. UC Davis (HHMI Predoctoral Fellowship Recipient). Currently Postdoc UC Santa Cruz
Brent Cezairliyan, 2000, Conservative and Radical Neutrality Tests of Mitochondrial and Nuclear Protein Sequences; Ph.D. Candidate MIT
Paula Spaeth, 2001, Neutral and Adaptive Variation at the Mpi and Gpi Enzyme Loci in the Acorn Barnacle, *Semibalanus balanoides*. Currently Ph.D. Candidate Stanford University, with Elizabeth HTim Sackton, 2001,

Coadaptation of Nuclear and Mitochondrial Genomes in *Drosophila simulans*. Ph.D. candidate with Andy Clark, Cornell

Sarah Kingan, 2002, Adaptive Evolution of Semenogelin in Hominoids. Currently Ph.D. Candidate with Dan Hartl, Harvard University

Jeff Rasmussen, 2002, Confidence limits on “informative” gene sets from Affymetrix microarray experiments. Currently Ph.D. candidate, University of Washington, Department of Genome Sciences

Brandon Finegold, 2002, Population structure of Galapagos samples of *Megabalanus* barnacles inferred from mtDNA.

Ellen Goldstein, 2004, Functional consequences of mtDNA introgression between *Drosophila* species. M.D candidate, Einstein

Zelalem Alehegn, 2004, Protein substitutions in mitochondrial proteins of humans and other apes.

Lietta Nicolaidis, 2005, Genetic architecture of oxidative stress resistance in mitochondrial introgression lines of *Drosophila*. Research Assistant, UCL

Johanna Kowalko, 2005, Biochemical flexibility and the adaptation to environmental heterogeneity in the acorn barnacle, *Semibalanus balanoides*. Research Assistant, Univ. of Pennsylvania

Eric Franzosa, 2006, Computational analyses of selection on human mitochondrial tRNAs. Ph.D. Candidate, Bioinformatics, Boston University.

Jeffrey Hofmann, 2005-2008. Mitochondrial genetics of aging and metabolic disease in *Drosophila*.

Sean Prior, 2007, Mitonuclear genetics of salinity tolerance in *Fundulus*.

Max Rubinstein, 2008, Mitochondrial genetics of aging in *Drosophila*”

Ikenna Achilihu, 2008, Genetic variation for hypoxia in *Fundulus*

Maggie Sogin, 2009, Mitonuclear Population genetics of *Fundulus*

Anya Brown, 2009, Mitonuclear population genetics of *Fundulus*

Leann Barnes, 2009, Population genetics of polluted and clean sites in *Fundulus*

SERVICE TO THE UNIVERSITY

Member, Search Committee for faculty position in the Bay Paul Center at MBL, 2008-2009

Member, Instructional Advisory Committee for Dean Sheila Bonde, Fall 2008

Member, Advisory Search Committee for the Dean of Biology and Medicine, 2008

Member, Steering Committee for expansion of the Brown/MBL collaboration, 2007-2008

Chair, Working Group on Teaching Assistant positions in Biology and Medicine, 2008

Director of Graduate Studies, Department of Ecology and Evolutionary Biology, 2003-present

Director, Graduate Fellowship program, RI EPSCoR program, 2006-2009

Chair, BioMed Committee to Reevaluate Tenure, Promotion and Reappointment, 2006-2007

Member, Undergraduate Science Education Committee, 2006-2007

Member, Search Committee for Assistant Professor of Computational Biology, 2005-2006, 2006-2007

Member, Academic Priorities Committee, 2003-2006; Vice Chair 2004-2006

Member, Executive Committee, Center for Computational Molecular Biology, 2004-present

Member, Action Group for Dean Position in Graduate and Postdoctoral Studies, Spring 2005

Member, Search Committee, Dean Position in Graduate and Postdoctoral Studies, Fall 2005

Member, Search Committee, Assistant Professor, Ecology and Evolutionary Biology
 Member, Search Committee, Assistant Professor, Center for Computational Molecular Biology
 Member, Search Committee, Dean of the Graduate School, Spring 2005
 Member, Search Committee, Dean of Medical and Biological Sciences, Spring 2003
 Member, Undergraduate Biology Curriculum Committee, 1995-present
 Director, Brown University DNA Sequencing Facility
 Member of Computational Biology Committee to design and establish an Sc.B. Degree in Computational Biology, 1997
 Member of Advisory Committee for the Center for Genetics and Genomics, MCB Department
 Chair, Faculty Search for Genomics Position, Molecular Biology, Cell Biology, and Biochemistry, 2000-2001
 Chair, Faculty Search for Computational Biology; Dept. of Molecular Biology, Cell Biology, and Biochemistry
 Member Search Committee, Evolutionary Genetics Department of Ecology and Evolutionary Biology; 1995 (Adjunct Position), 1996 (Tenure track position)
 Member of the Molecular Biology Facility Committee, MCB Department
 Colloquium Lecture and Discussion, Inauguration Weekend for President Ruth Simmons, Brown University, October 14, 2001: Must We Grow Old: Genetics of Aging (with Prof. Wharton and Tatar)
 Joint Appointment in the Department of Molecular Biology, Cell Biology and Biochemistry (MCB); Serving on Ph.D. Committees, Advisory Committees, and as a Trainer in the MCB Graduate Program
 Undergraduate Concentration Advisor, for A.B. Biology, Sc.B. Biology and Applied Math-Biology, Sc.B. in Computational Biology Degrees.

SERVICE TO THE COMMUNITY – EDUCATIONAL OUTREACH

Bookshelves in Biology, 1991: A Unit for the Use of Computers in Evolutionary Tree Building, Lecture in NSF-Funded Program for Outreach with area High School Teachers, PI, Prof. Peter Heywood
 Zooscope, 1995: Lecture on Conservation Genetics and Classroom Exercises for Experimental Analysis of Captive Breeding Programs, using *Drosophila*. NSF-Funded Program for Outreach with area High School Teachers, PI, Prof. Peter Heywood
 Genes and Genomes 2001: Lecture on Using *Drosophila* Selection Experiments to Map Genes; Computer Exercises for Classroom analysis of *Drosophila* Genome Web Page; Programs for Regional High School Teachers and Interested Public, May 5, 2001, Brown University.
 Barrington High School, 2005: Lecture on Natural Selection and the Evolutionary Genetics of Climate Change: a *Drosophila* model. Part of the Broader Impacts Aim of NSF Grant: "Genetic architecture of thermal selection in *Drosophila*".