CURRICULUM VITAE

Robert R. H. Anholt

Professional Training and Academic Career:

2000- present	Professor, Department of Zoology, North Carolina State University, Raleigh, North Carolina
2000-present	Associate Member, Department of Genetics, North Carolina State University, Raleigh, North Carolina
2000-present	Director, W. M. Keck Center for Behavioral Biology, North Carolina State University, Raleigh, North Carolina
2000-present	Member of the Genomics Sciences Faculty at North Carolina State University
1998-2000	Program Director, W. M. Keck Program for Behavioral Biology, North Carolina State University, Raleigh, North Carolina.
1996-2000	Associate Professor, Department of Zoology, North Carolina State University, Raleigh, North Carolina
1993-1996	Research Associate Professor, Department of Zoology, North Carolina State University, Raleigh, North Carolina
1992-1993	Member, Duke Comprehensive Cancer Center
1988-1993	Assistant Professor, Department of Neurobiology, Duke University Medical Center, Durham, North Carolina
1986-1988	Assistant Professor, Department of Physiology, Duke University Medical Center, Durham, North Carolina
1982-1986	Postdoctoral Fellow, Department of Neurocience, The Johns Hopkins University School of Medicine, Baltimore, Maryland (Dr. Solomon H. Snyder, advisor)
1982	Interim Postdoctoral Appointment, The Salk Institute for Biological Studies, San Diego, California (Dr. Jon Lindstrom, advisor)
1982	Doctor of Philosophy in Biology, University of California, San Diego (Dr. Mauricio Montal, advisor)
1976-1982	Teaching Assistant, Department of Biology, Univ.California, San Diego

1975-1976	Research Assistant, Department of Pathological Anatomy, Academic Hospital Wilhelmina Gasthuis, University of Amsterdam, Amsterdam, The Netherlands
1975	Master of Science in Biochemistry, University College, London, England
1973	Bachelor of Science in Biology (with distinction), The Hebrew University of Jerusalem, Jerusalem, Israel

Publications:

1. Jöbsis, A.C., de Vries, G.P., Anholt, R.R.H. and Sanders, G.T.B. (1977) Prostaat zure fosfatase enzymhistochemisch en immunohistochemisch aangetoond. Ned. Tijdschr. Geneesk. **121**: 1871-1872.

2. Jöbsis, A.C., de Vries, G.P., Anholt, R.R.H. and Sanders, G.T.B. (1978) Demonstration of the prostatic origin of metastases: An immunohistochemical method for formaline-fixed embedded tissue. Cancer **41**: 1788-1793.

3. Lindstrom, J., Anholt, R., Einarson, B., Engel, A., Osame, M. and Montal, M. (1980) Purification of acetylcholine receptors, reconstitution into lipid vesicles, and study of agonist-induced cation channel regulation. J. Biol. Chem. **255**: 8340-8350.

4. Nelson, N., Anholt, R., Lindstrom, J. and Montal, M. (1980) Reconstitution of purified acetylcholine receptors with functional ion channels in planar lipid bilayers. Proc. Natl. Acad. Sci. U.S.A. **77**: 3057-3061.

5. Anholt, R., Lindstrom, J. and Montal, M. (1980) Functional equivalence of monomeric and dimeric forms of purified acetylcholine receptors from Torpedo californica in reconstituted lipid vesicles. Eur. J. Biochem. **109**: 481-487.

6. Anholt, R., Lindstrom, J. and Montal, M. (1981) Stabilization of acetylcholine receptor channels by lipids in cholate solution and during reconstitution in vesicles. J. Biol. Chem. **256**: 4377-4387.

7. Anholt, R.R.H. (1981) Reconstitution of acetylcholine receptors in model membranes. Trends Biochem. Sci. **6**: 288-291.

8. Anholt, R., Fredkin, D.R., Deerinck, T., Ellisman, M., Montal, M. and Lindstrom, J. (1982) Incorporation of acetylcholine receptors into liposomes: Vesicle structure and acetylcholine receptor function. J. Biol. Chem. **257**: 7122-7134.

9. Anholt, R.R.H. (1982) Reconstitution of acetylcholine receptors in model membranes. Doctoral dissertation, University of California, San Diego.

10. Anholt, R.R.H., Montal, M. and Lindstrom, J. (1983) Incorporation of acetylcholine

receptors in model membranes: An approach aimed at studies of the molecular basis of neurotransmission. In: Peptide and Protein Reviews (Editor, M.T.W. Hearn), Volume 1, Chapter 4, pp. 95-137, Marcel Dekker, Inc. New York, NY.

11. Anholt, R. R. H., Murphy, K. M. M., Mack, G. E. and Snyder, S. H. (1984) Peripheral-type benzodiazepine receptors in the central nervous system: Localization to olfactory nerves. J. Neurosci. **4**: 593-603.

12. Anholt, R. R. H., Lindstrom, J. and Montal, M. (1985) The molecular basis of neurotransmission: Structure and function of the nicotinic acetylcholine receptor. In: The Enzymes of Biological Membranes (Editor, A. Martonosi), Volume 3, Chapter 36, pp.335-401, Plenum Press, New York, NY.

13. De Souza, E. B., Anholt, R. R. H., Murphy, K. M. M., Snyder, S. H. and Kuhar, M. J. (1985) Peripheral-type benzodiazepine receptors in endocrine organs: Autoradiographic localization in rat pituitary, adrenal and testis. Endocrinology **116**: 567-573.

14. Anholt, R. R. H., De Souza, E. B., Kuhar, M. J. and Snyder, S. H. (1985) Depletion of peripheral-type benzodiazepine receptors after hypophysectomy in rat adrenal gland and testis. Eur. J. Pharmacol. **110**: 41-46.

15. Anholt, R. R. H., De Souza, E. B., Oster-Granite, M. L. and Snyder, S. H. (1985) Peripheral-type benzodiazepine receptors: Autoradiographic localization in whole body sections of neonatal rat. J. Pharmacol. Exp. Ther. **233**: 517-526.

16. Montal, M., Anholt, R. R. H. and Labarca, P. (1986) The reconstituted acetylcholine receptor. In: Ion Channel Reconstitution (Editor, C. Miller), Chapter 8, pp. 157-204, Plenum Press, New York, NY.

17. Anholt, R. R. H., Pedersen, P. L., De Souza, E. B. and Snyder, S. H. (1986) The peripheral-type benzodiazepine receptor: Localization to the mitochondrial outer membrane. J. Biol. Chem. **261**: 576-583.

18. Anholt, R. R. H., Aebi, U., Pedersen, P. L. and Snyder, S. H. (1986) Solubilization and reassembly of the mitochondrial benzodiazepine receptor. Biochemistry **25**: 2120-2125.

19. Anholt, R. R. H. (1986) Mitochondrial benzodiazepine receptors as potential modulators of intermediary metabolism. Trends Pharmacol. Sci. **7**: 506-511.

20. Anholt, R. R. H., Aebi, U. and Snyder, S. H. (1986) A partially purified preparation of isolated chemosensory cilia from the olfactory epithelium of the bullfrog, Rana catesbeiana. J. Neurosci. **6**: 1962-1969.

21. Sklar, P. B., Anholt, R. R. H. and Snyder, S. H. (1986) The odorant-sensitive adenylate

cyclase of olfactory receptor cells: Differential stimulation by distinct classes of odorants. J. Biol. Chem. **261**: 15538-15543.

22. Anholt, R. R. H., Mumby, S. M., Stoffens, D. A., Girard, P. R., Kuo, J. F., Gilman, A. G. and Snyder, S. H. (1986) Transduction proteins of olfactory receptor cells: Identification of guanine nucleotide binding proteins and protein kinase C. Ann. NY Acad. Sci. (1987) **510**: 152-156.

23. Sklar, P. B., Anholt, R. R. H. and Snyder, S. H. (1986) The odorant-sensitive adenylate cyclase of olfactory receptor cells: Differential stimulation by distinct classes of odorants. Ann. NY Acad. Sci. (1987) **510**: 623-626.

24. Anholt, R. R. H., Mumby, S. M., Stoffers, D. A., Girard, P. R., Kuo, J. F. and Snyder, S. H. (1987) Transduction proteins of olfactory receptor cells: Identification of guanine nucleotide binding proteins and protein kinase C. Biochemistry **26**: 788-795.

25. Anholt, R. R. H. (1987) Primary events in olfactory reception. Trends Biochem. Sci. **12**: 58-62.

26. Labarca, P., Simon, S. A. and Anholt, R. R. H. (1988) Activation by odorants of a multistate cation channel from olfactory cilia. Proc. Natl. Acad. Sci. U.S.A. **85**: 944-947.

27. Anholt, R. R. H. (1988) Functional reconstitution of the olfactory membrane: Incorporation of the olfactory adenylate cyclase in liposomes. Biochemistry **27**: 6464-6468.

28. Anholt, R. R. H. (1989) Molecular physiology of olfaction. Am. J. Physiol. **257** (Cell Physiol. **26**): C1043-C1054.

29. Anholt, R. R. H., Farmer, R. W. and Karavanich, C. A. (1989) Excitation by odorants of olfactory receptor cells: Molecular interactions at the ciliary membrane. In: Chemical Senses: Molecular Aspects of Taste and Odor Reception (Editors, J. G. Brand, J. H. Teeter, M. R. Kare and R. H. Cagan) Chapter 17, pp. 347-361, Marcel Dekker, Inc., New York, NY.

30. Anholt, R. R. H. (1990) Cellular and subcellular localization of peripheral benzodiazepine receptors: Implications for a possible function in the control of intermediary metabolism. Eur. J. Pharmacol. (1990) **183**: 145-146.

31. Anholt, R. R. H., Petro, A. E. and Rivers, A. M. (1990) Identification of a group of novel membrane proteins unique to chemosensory cilia of olfactory receptor cells. Biochemistry, **29**: 3366-3373.

32. Anholt, R. R. H. and Rivers, A. M. (1990) Olfactory transduction: Crosstalk between

second messenger systems. Biochemistry **29**: 4049-4054.

33. Zarbin, M. A. and Anholt, R. R. H. (1991) Benzodiazepine receptors in the eye. Invest. Ophthalmol. Vis. Sci. **32**: 2579-2587.

34. Snyder, D. A., Rivers, A. M., Yokoe, H., Menco, B. Ph.M. and Anholt, R. R. H. (1991) Olfactomedin: Purification, characterization and localization of a novel olfactory glycoprotein. Biochemistry **30**: 9143-9153.

35. Anholt, R. R. H. (1991) Odor recognition and olfactory transduction: The new frontier. Chemical Senses **16**: 421-427.

36. Anholt, R. R. H. (1992) Molecular aspects of olfaction. In: Science of Olfaction (Editors, M. Serby and K. Chobor) Chapter 3, pp. 51-79, Springer-Verlag, New York, NY.

37. Anholt, R. R. H. (1993) Molecular neurobiology of olfaction. Critical Rev. Neurobiol. **7**: 1-22.

38. Bal, R. S. and Anholt, R. R. H. (1993) Formation of the extracellular mucous matrix of olfactory neuroepithelium: Identification of partially and non-glycosylated precursors of olfactomedin. Biochemistry **32**: 1047-1053.

39. Yokoe, H. and Anholt, R. R. H. (1993) Molecular cloning of olfactomedin, an extracellular matrix protein specific to olfactory neuroepithelium. Proc. Natl. Acad. Sci. U.S.A. **90**: 4655-4659.

40. Anholt, R. R. H. (1994) Signal integration in the nervous system: Adenylate cyclases as molecular coincidence detectors. Trends Neurosci. **17**: 37-41.

41. Menini, A. and Anholt, R. R. H. (1994) Cyclic nucleotide-activated channels. In: Endocrinology and Metabolism. Progress in Research and Clinical Practice. Vol. 6. Ion Channels and Ion Pumps: Metabolic and Endocrine Relationships in Biology and Clinical Medicine (Editors, P. P. Foa and M. F. Walsh), Chapter 24, pp. 526-548, Springer-Verlag, New York, NY.

42. Anholt, R. R. H. (1994) Dazzle'em with style: The art of oral scientific presentation. W. H. Freeman and Company, New York, NY.

43. Anholt, R. R. H. (1995) Preparation of olfactory cilia. In: Experimental Cell Biology of Taste and Olfaction: Current Techniques and Protocols (Editors, A. I. Spielman and J. G. Brand), CRC Press, Inc., Boca Raton, Fl., pp. 163-168.

44. Anholt, R. R. H., Lyman, R. F. and Mackay, T. F. C. (1996) Effects of single *P*-element insertions on olfactory behavior in *Drosophila melanogaster*. Genetics **143**: 293-301.

45. Mackay, T. F. C., Hackett, J. B., Lyman, R. F. Wayne, M. L. and Anholt, R. R. H. (1996) Quantitative genetic variation of odor-guided behavior in a natural population of *Drosophila melanogaster*. Genetics **144**: 727-735.

46. Wekesa, K. S. and Anholt, R. R. H. (1997) Pheromone-regulated production of inositol-(1,4,5)-trisphosphate in the mammalian vomeronasal organ. Endocrinology **138**: 3497-3504.

47. Karavanich, C. and Anholt, R. R. H. (1998) Evolution of olfactomedin: Structural constraints and conservation of primary sequence motifs. Ann. NY Acad. Sci. **855**:294-300.

48. Fedorowicz, G. M., Fry, J. D., Anholt, R. R. H. and Mackay, T. F. C. (1998) Epistatic interactions between *smell-impaired* loci in *Drosophila melanogaster*. Genetics **148**: 1885-1891.

49. Karavanich, C. A. and Anholt, R. R. H. (1998) Molecular evolution of olfactomedin. Mol. Biol. Evol. **15**: 718-726.

50. Wekesa, K. S. and Anholt, R. R. H. (1999) Differential expression of G proteins in the mouse olfactory system. Brain Research **837**: 117-126.

51. Kulkarni, N. H., Karavanich, C. A, Atchley, W. R. and Anholt, R. R. H. (2000) Characterization and differential expression of a human gene family of olfactomedin-related proteins. Genet. Res. **76**: 41-50.

52. Anholt, R. R. H. and Mackay, T. F. C. (2001) The genetic architecture of odor-guided behavior in *Drosophila melanogaster*. Behav. Genet. **31**: 17-27.

53. Anholt, R. R. H., Fanara, J. J., Fedorowicz, G. M., Ganguly, I., Kulkarni, N. H., Mackay, T. F. C. and Rollmann, S. M. (2001) Functional genomics of odor-guided behavior in *Drosophila melanogaster*. Chem. Senses **26**: 215-221.

54. Kulkarni, N. H., Yamamoto, A., Robinson, K. O., Mackay, T. F. C. and Anholt, R. R. H. (2002) The DSC1 channel, encoded by the *smi60E* locus, contributes to odor-guided behavior in *Drosophila melanogaster*. Genetics **161**: 1507-1516.

55. Luo, A. H., Cannon, E. H., Wekesa, K. S., Lyman, R. F., Vandenbergh, J. G. and Anholt, R. R. H. (2002) Impaired olfactory behavior in mice deficient in the α subunit of G_o. Brain Res. **941**: 62-71.

56. Fanara, J. J., Robinson, K. O., Rollmann, S. M., Anholt, R. R. H. and Mackay, T. F. C. (2002) *Vanaso* is a candidate quantitative trait gene for olfactory behavior in *Drosophila melanogaster*. Genetics **162**:1321-1328.

57. Borrás, T., Morozova, T. V., Heinsohn, S. L., Lyman, R. F., Mackay, T. F. C. and Anholt, R. R. H. (2003) Transcription profiling in *Drosophila* eyes that overexpress the human glaucoma-associated trabecular meshwork-inducible glucocorticoid response protein/myocilin (TIGR/MYOC). Genetics **163**: 637-645.

58. Ganguly, I., Mackay, T. F. C. and Anholt, R. R. H. (2003) *scribble* is essential for olfactory behavior in *Drosophila*. Genetics **164**: 1447-1457.

59. Anholt, R. R. H., Dilda, C. L., Chang, S., Fanara, J.J., Kulkarni, N. H., Ganguly, I., Rollmann, S. M., Kamdar, K. P. and Mackay, T. F. C. (2003) The genetic architecture of odor-guided behavior in Drosophila: Epistasis and the transcriptome. Nature Genetics **35**:180-184.

60. Anholt, R. R. H. (2004) Genetic modules and networks for behavior: Lessons from *Drosophila*. BioEssays **26:** 1299-1306.

61. Anholt, R. R. H. and Mackay, T. F. C. (2004) Quantitative genetic analyses of complex behaviours in *Drosophila*. Nature Reviews Genetics **5**: 838-849.

62. Rollmann, S. M., Mackay, T. F. C. and Anholt, R. R. H. (2005) Pinocchio, a novel protein expressed in the antenna, contributes to olfactory behavior in *Drosophila melanogaster*. J. Neurobiol. **63**: 146-158.

63. Anholt, R. R. H. (2005) Dazzle'em with style: The art of oral scientific presentation. Second Edition, Elsevier/Academic Press, New York, NY.

64. Rollmann, S. M., Magwire, M. M., Morgan, T. J., Özsoy, E. D., Yamamoto, A., Mackay, T. F. C. and Anholt, R. R. H. (2006) Pleiotropic fitness effects of the *Tre1/Gr5a* region in *Drosophila.* Nature Genetics **38**: 824-829.

65. Mackay, T. F. C. and Anholt, R. R. H. (2006) Of flies and man: Drosophila as a model for human complex traits. Annu. Rev. Genomics Hum. Genet. **7**: 339-367.

66. Morozova, T. V., Anholt, R. R. H. and Mackay, T. F. C. (2006) Transcriptional response to alcohol exposure in *Drosophila melanogaster*. Genome Biol., in press

67. Sambandan, D., Yamamoto, A., Fanara, J. J., Mackay, T. F. C. and Anholt, R. R. H. (2006) Dynamic genetic interactions determine odor-guided behavior in *Drosophila melanogaster*. Genetics, in press.

Selected Abstracts:

1. Anholt, R., Lindstrom, J. and Montal, M. (1981) Reconstitution of acetylcholine receptors in lipid vesicles. VII International Biophysics Congress and III Pan-American Biochemistry Congress, Mexico, P. 258.

2. Anholt, R., Hudson, V., Fredkin, D. R., Montal, M. and Lindstrom, J. (1981) Functional characterization of purified acetylcholine receptors reconstituted in lipid vesicles. Soc. Neurosci. Abst. **7**: 499.

3. Murphy, K. M. M., Anholt, R. R. H., Mack, G. E. and Snyder, S. H. (1983) High density peripheral-type benzodiazepine receptors on primary olfactory afferents. Soc. Neurosci. Abst. **9**: 1021

4. Anholt, R. R. H., Murphy, K. M. M., Mack, G. E. and Snyder, S. H. (1984) Peripheral-type benzodiazepine receptors in the central nervous system: Localization to olfactory nerves. Sixth Annual Meeting of the Association for Chemoreception Sciences, Abst. 12.

5. Anholt, R. R. H. and Snyder, S. H. (1984) Strategies towards the identification of membrane components of olfactory receptor cells which are involved in odor recognition and neuronal plasticity. American Chemical Society, Agricultural and Food Chemistry Division, Abst. 56.

6. Anholt, R. R. H., De Souza, E. B., Kuhar, M. J. and Snyder, S. H. (1984) Association of peripheral-type benzodiazepine receptors with endocrine cells in rat pituitary, adrenal and testis. Soc. Neurosci. Abst. **10**: 477.

7. Anholt, R. R. H. and Snyder, S. H. (1985) Biochemical characterization of isolated cilia from the olfactory epithelium of the bullfrog, *Rana catesbeiana*. Seventh Annual Meeting of the Association for Chemoreception Sciences, Abst, 12; published in Chemical Senses (1985) **10**: 397.

8. Sklar, P. B., Anholt, R. R. H. and Snyder, S. H. (1986) The odorant-sensitive adenylate cyclase of olfactory receptor cells: Differential stimulation by distinct classes of odorants. Soc. Neurosci. Abst. **12**: 1178.

9. Labarca, P., Simon, S. A. and Anholt, R. R. H. (1986) Activation by odorants of a voltage-dependent, cation-selective channel in ciliary membranes from the olfactory epithelium of the bullfrog. Soc. Neurosci. Abst. **12**: 1178.

10. Anholt, R. R. H., Mumby, S. M., Stoffens, D. A., Girard, P. R., Kuo, J. F., Gilman, A. G. and Snyder, S. H. (1986) Transduction proteins of olfactory receptor cells: Identification of guanine nucleotide binding proteins and protein kinase C. International Symposium on Olfaction and Taste and Eighth Annual Meeting of the Association for Chemoreception Sciences, Abst. S8.

11. Sklar, P. B., Anholt, R. R. H. and Snyder, S. H. (1986) The odorant-sensitive adenylate cyclase of olfactory receptor cells: Differential stimulation by distinct classes of odorants. International Symposium on Olfaction and Taste and Eighth Annual Meeting of the Association for Chemoreception Sciences, Abst. S9.

12. Labarca, P., Simon, S. A. and Anholt, R. R. H. (1987) Ion channels of olfactory cilia. Ninth Annual Meeting of the Association for Chemoreception Sciences, Abst. 151.

13. Anholt, R. R. H., (1988) Incorporation of the olfactory adenylate cyclase in liposomes. Tenth Annual Meeting of the Association for Chemoreception Sciences, Abst. 151.

14. Petro, A. E., Rivers, A. M. and Anholt, R. R. H. (1989) Membrane proteins unique to olfactory cilia identified by monoclonal antibodies. Eleventh Annual Meeting of the Association for Chemoreception Sciences, Abst. 21.

15. Anholt, R. R. H. and Rivers, A. M. (1990) Activation of olfactory adenylate cyclase by calcium via calmodulin. Twelfth Annual Meeting of the Association for Chemoreception Sciences, Abst. 127.

16. Anholt, R. R. H. (1990) Cellular and subcellular localization of peripheral benzodiazepine receptors: Implications for a possible function in the control of intermediary metabolism. XIth International Congress of Pharmacology (Amsterdam, The Netherlands; invited symposium speaker), Abst. 9001.

17. Anholt, R. R. H. (1991) Molecular aspects of olfaction. Twenty Second Annual Meeting of the American Society for Neurochemistry (Charleston, South Carolina; invited symposium speaker), Transactions Am. Soc. Neurochem. **22**: 251.

18. Snyder, D. A., Rivers, A. M., Yokoe, H., Menco, B. Ph.M. and Anholt, R. R. H. (1991) Olfactomedin: A novel glycoprotein expressed in olfactory neuro-epithelium. Thirteenth Annual Meeting of the Association for Chemoreception Sciences, Abst. 36.

19. Snyder, D. A., Rivers, A. M., Yokoe, H., Menco, B. Ph. M. and Anholt, R. R. H. (1991) Olfactomedin: A candidate odorant receptor protein. Third IBRO World Congress of Neuroscience (Montreal, Canada), Abst. P61.1, p. 389.

20. Anholt, R. (1991) Olfaction, olfactomedin and the dynamic range of smell. U.S. Army Chemical Research, Development and Engineering Center Scientific Conference on Chemical Defense Research (Aberdeen Providing Ground, Maryland; invited symposium speaker). Abst. 78, p. 21.

21. Bregante, M., Anholt, R. R. H., Gambale, F. and Menini, A. (1992) Ion channels in olfactory ciliary membranes incorporated in lipid bilayers. Columbus Conference on Physics of Matter (Genova, Italy), Abstract 2-32.

22. Anholt, R. R. H., Yokoe, H. and Snyder, D. A. (1992) Olfactomedin: A novel extracellular glycoprotein uniquely expressed in olfactory neuroepithelium. Soc. Neurosci. Abst. **18**: 596.

23. Anholt, R. R. H., Yokoe, H. and Bal, R. S. (1993) Olfactomedin: A novel extracellular matrix protein. Transactions Am. Soc. Neurochem. **24**: 150.

24. Anholt, R. R. H. and Yokoe, H. (1993) Primary structure of olfactomedin: A novel olfactory tissue-specific extracellular matrix protein. Fifteenth Annual Meeting of the Association for Chemoreception Sciences, Abst. 120.

25. Anholt, R. R. H., Lyman, R. F. and Mackay, T. F. C. (1994) Identification of olfactory genes by single *P*-element mutagenesis of inbred *Drosophila melanogaster*. Sixteenth Annual Meeting of the Association for Chemoreception Sciences, Abst. 224.

26. Lyman, R. F., Mackay, T. F. C., and Anholt, R. R. H. (1994) Olfactory genes identified from a behavioral screen of *Drosophila melanogaster* lines carrying single *P*-element inserts. Eleventh Congress of the European Chemoreception Research Organization (Blois, France), Abst. 74.

27. Anholt, R., Lyman, R. and Mackay, T. (1995) Quantitative trait loci for olfaction in *Drosophila melanogaster*. Thirty-sixth Annual Drosophila Research Conference (Atlanta, GA), p. 38.

28. Anholt, R. R. H. (1995) Olfaction and reproduction: Molecular aspects of odor recognition and signal transduction. 1995 Triangle Conference on Reproductive Biology, Abst. 3.

29. Anholt, R. R. H., Carlson, M. A., Kwok, Y. L., Oppermann, M., Wekesa, K. S., Lefkowitz, R. J. and Vandenbergh, J. G. (1996) Characterization of transduction enzymes and G proteins in microvillar membrane preparations from mammalian vomeronasal organ. Eighteenth Annual Meeting of the Association for Chemoreception Sciences, Abst. 3.

30. Kulkarni, N. H., Nuzhdin, S. V., Mackay, T. F. C. and Anholt, R. R. H. (1996) Characterization of *smell impaired* genes of *Drosophila melanogaster*. Eighteenth Annual Meeting of the Association for Chemoreception Sciences, Abst. 156.

31. Anholt, R. R. H., Carlson, M. R., Wekesa, K. S., Kwok, Y. L. and Vandenbergh, J. G. (1996) Chemosensory transduction enzymes and G proteins in microvillar membranes from mammalian vomeronasal organ. 1996 Triangle Conference on Reproductive Biology, Abst. 20.

32. Anholt, R. R. H., Kulkarni, N. H. and Mackay, T. F. C. (1996) Characterization of *smell impaired* genes of *Drosophila melanogaster*. Soc. Neurosci. Abst. **22**: 258.

33. Mackay, T., Hackett, J., Lyman, R., Wayne, M. and Anholt, R. (1996) Quantitative trait loci for olfaction in *Drosophila melanogaster*: Natural variation on Chromosome *3* and its relationship to fitness. Thirty-seventh Annual Drosophilia Research Conference (San Diego, CA) p. 33.

34. Anholt, R. R. H. (1997) Evolution of olfactomedin: Structural constraints and conservation of primary sequence motifs. International Symposium on Olfaction and

Taste XII (San Diego, CA) p. 33.

35. Wekesa, K. S. and Anholt, R. R. H. (1997) Signal transduction pathway in the mammalian vomeronasal organ: The role of IP3 International Symposium on Olfaction and Taste XII (San Diego, CA) p. 41.

36. Kulkarni, N. H., Buczkowska, G., Mackay, T. F. C. and Anholt, R. R. H. (1997) Molecular cloning of *smell-impaired* genes that affect odor-guided behavior in *Drosophila melanogaster*. International Symposium on Olfaction and Taste XII (San Diego, CA) p. 77.

37. Fedorowicz, G. M., Fry, J. D., Anholt, R. R. H. and Mackay, T. F. C. (1998) Epistatic interactions between *smell-impaired* loci in *Drosophila melanogaster*. Thirty-ninth annual Drosophila Research Conference (Washington, DC).

38. Wekesa, K. S. and Anholt, R. R. H. (1998) Distinct glomerular projection patterns of primary olfactory axons expressing different G-protein α subunits in the mouse olfactory system. Twentieth Annual Meeting of the Association for Chemoreception Sciences, Abst. 22.

39. Fedorowicz, G. M., Kulkarni, N., Roote, J., Ashburner, M., Mackay, T. F. C. and Anholt, R. (1999) Disruption of the gene encoding a Dyrk2 kinase homologue causes olfactory impairment in *Drosophila melanogaster*. Fortieth annual Drosophila Research Conference (Bellevue, WA), Abst. 587A.

40. Fedorowicz, G. M., Kulkarni, N., Roote, J., Ashburner, M., Mackay, T. F. C. and Anholt, R. (1999) Disruption of the gene encoding a Dyrk2 kinase homologue causes olfactory impairment in *Drosophila melanogaster*. XXIst meeting of the Association for Chemoreception Sciences (Sarasota, FL), Abst.61.

41. Anholt, R., Kulkarni, N., Fedorowicz, G., Ganguly, I. and Mackay, T. (2000) Functional genomics of odor-guided behavior in *Drosophila melanogaster*. XXIInd meeting of the Association for Chemoreception Sciences (Sarasota, FL), Abst. 11.

42. Luo, A. H., Wekesa, K. S., Vandenbergh, J. G. and Anholt, R. R. (2000) Olfactory impairment in homologous recombinant mice deficient in the α subunit of Go. XXIInd meeting of the Association for Chemoreception Sciences (Sarasota, FL), Abst. 269.

43. Rowlette, L. L., Gonzalez, P., Anholt, R., Borrás, T. (2000) Characterization of olfactomedins in the human trabecular meshwork. Invest. Ophthalmol. Vis. Sci. **41**: S503.

44. Ganguly, I., Mackay, T. F. C. and Anholt, R. R. H. (2001) Scribble: a PDZ domain protein that contributes to sexually dimorphic olfactory avoidance behavior in *Drosophila*. 42nd annual Drosophila Research Conference (Washington, DC), Abst. 799A.

45. Kulkarni, N. H., Mackay, T. F. C. and Anholt, R. R. H. (2001) The DSC1 sodium channel, encoded by the *smi60E* locus, regulates olfactory sensitivity in *Drosophila melanogaster*. 42nd annual Drosophila Research Conference (Washington, DC), Abst. 801C.

46. Robinson, K., Schal, C. and Anholt, R. (2001) Identification of proteins that mediate pheromone recognition in cockroaches. XXIIIrd meeting of the Association for Chemoreception Sciences (Sarasota, FL), Abst. 293.

47. Robinson, K., Schal, C. and Anholt, R. (2001) Identification of proteins that mediate pheromone recognition in cockroaches. Soc. Neurosci. Abst. #61.1.

48. Ganguly, I., Mackay, T. F. C. and Anholt, R. R. H. (2001) The *Scribble* protein is essential for olfactory avoidance behavior in *Drosophila melanogaster*. Neurobiology of Drosophila Meeting, Cold Spring Harbor Laboratory, NY.

49. Ganguly, I., Mackay, T. F. C. and Anholt, R. R. H. (2001) The *Scribble* protein is essential for olfactory avoidance behavior in *Drosophila melanogaster*. The International Behavioural and Neural Genetics Society (IBANGS) Meeting, San Diego, CA.

50. Fanara, J. J., Robinson, K. O., Anholt, R. R. H. and Mackay, T. F. C. (2001) Vanaso is a quantitative trait locus for olfactory behavior in Drosophila. The International Behavioural and Neural Genetics Society (IBANGS) Meeting, San Diego, CA.

51. Anholt, R. R. H., Fanara, J. J., Robinson, K. O. and Mackay, T. F. C. (2002) Vanaso is a quantitative trait locus for Drosophila olfactory behavior. 43rd Annual Drosophila Research Conference, San Diego, CA.

52. L-L Rowlette, L. L., RR H Anholt, R. R. H.and T Borrás, T. (2002) Regulation of neuronal olfactomedin expression in the human trabecular meshwork. Invest. Ophthalmol. Vis. Sci. **43**: E-1040.

52. Borrás, T., Morozova, T. V., Heinsohn, S. L., Lyman, R. F., Mackay, T. F. C. and Anholt, R. R. H. (2003) Transgenic flies overexpressing TIGR/MYOC in the eye as a new model for glaucoma genetics Invest. Ophthalmol. Vis. Sci. **44**: E-3225.

53. Anholt, R. R. H., Dilda, C. L., Chang, S., Fanara, J. J., Kamdar, K. P. and Mackay, T. F. C. (2003) Transcription profiles of an epistatic network of genes that mediate olfactory behavior in *Drosophila melanogaster*. XIXth International Congress of Genetics, Melbourne, Australia.

54. Anholt, R. R. H., Borrás, T., Morozova, T. V., Heinsohn, S. L., Lyman, R. F. and Mackay, T. F. C. (2003) Transgenic flies overexpressing the human "Trabecular Meshwork Inducible Glucocorticoid Response Protein (TIGR/Myocilin)" in their eyes as a new model for glaucoma genetics. XIXth International Congress of Genetics,

Melbourne, Australia.

55. Anholt, R. R. H., Dilda, C. L., Chang, S., Fanara, J.J., Kulkarni, N. H., Ganguly, I., Rollmann, S. M., Kamdar, K. P. and Mackay, T. F. C. (2003) The genetic architecture of odor-guided behavior in Drosophila. Soc. Neurosci. Abst. #548.2.

56. Anholt, R. R. H., Dilda, C. L., Chang, S., Fanara, J.J., Kulkarni, N. H., Ganguly, I., Rollmann, S. M., Kamdar, K. P. and Mackay, T. F. C. (2003) The genetic architecture of odor-guided behavior in Drosophila. 45th Annual Drosophila Research Conference, Washington, DC. Abst. #108.

57. Royster, R. M., Anholt, R. R. H. and Mackay, T. F. C. (2004) Genetics of alcohol sensitivity in *Drosophila melanogaster.* Soc. Neurosci. Abst. # 913.21.

58. Rollmann, S. M., Magwire, M. M., Yamamoto, A., Mackay, T. F. C. and Anholt, R. R. H. (2005) The *gustatory receptor 5a* region in *Drosophila melanogaster* reveals integrated genetic networks for gustatory perception, starvation resistance and longevity. XXVIIth Meeting of the Association for Chemoreception Sciences (Sarasota, FL).

59. Morozova, T. V., Mackay, T. F. C. and Anholt, R. R. H. (2005) Genetics of alcohol sensitivity in *Drosophila melanogaster.* Soc. Neurosci. Abst. # 680.1.

60. Morozova, T. V., Mackay, T. F. C. and Anholt, R. R. H. (2006) Genomics of alcohol sensitivity and tolerance in *Drosophila melanogaster.* Gordon Conference on Genes and Behavior (Ventura, CA).

61. Lee, J. A., Anholt, R. R. H. and Cole, G. J. (2005) Role of olfactomedin-2 in zebrafish central nervous system development. Soc. Neurosci. Abst. #597.6.

62. Anholt, R., Carbone, M. A., Borrás, T and Mackay, T. (2006) Of flies and man: Drosophila as a model for glaucoma gene discovery. 17th International Congress of Eye Research (Buenos Aires, Argentina).

Patents and Inventions:

1. Anholt, R. R. H. and Mackay, T. F. C. (1994) Use of pyrazines and thiazoles as fly repellents. Patent disclosure NCSU 95-2.

2. Anholt, R. R. H. and Mackay, T. F. C. (2001) Targeted overexpression of the human trabecular meshwork inducible glucocorticoid response (TIGR) protein in the eye of *Drosophila melanogaster* as a model for glaucoma. Patent disclosure NCSU 01-173.

Book Reviews:

1,2. Neurobiology of Taste and Smell (Editors, T. E. Finger and W. L. Silver) John Wiley and Sons, New York, NY, 1987. Reviewed by R. R. H. Anholt. *The FASEB Journal* (1987) **1**: 156, and *Trends Neurosci.* (1988) **11**: 83-84.

3. Molecular Neurobiology of the Olfactory System: Molecular, Membranous, and Cytological Studies (Editors, F. L. Margolis and T. V. Getchell) Plenum Press, New York, NY, 1988. Reviewed by R. R. H. Anholt. *Trends Neurosci.* (1989) **12**: 122-123.

4. The Vertebrate Olfactory System: Chemical neuroanatomy, Function and Development (N. Halász) Akadémiaia Kiadó, Budapest, 1990. Reviewed by R. R. H. Anholt. *Science* (1991) **252**: 321.

Consultant Appointments and Service:

1985 Invited participant to the Army Research Office Study Group on "Initial mechanisms in olfaction" (April 29, 1985, Sarasota, Florida).

Invited participant to the NATO Advanced Research Workshop on "Molecular mechanisms in vertebrate olfaction" (August 16-22, 1985, University of Warwick, Coventry, United Kingdom).

1986 Consultant, Universidad Central del Caribe, Escuela de Medicina, Department of Biochemistry, Cayey, Puerto Rico (May, 1986).

1989 Member of the National Defense Science and Engineering Graduate Fellowship Program (Battelle) evaluation panel (March, 1989).

1991 Member of the Program Committee for the Thirteenth Annual Meeting of the Association for Chemoreception Sciences (1991, Sarasota, Florida).

1996 Co-organizer of the U.S. Army Research Office sponsored Workshop-Conference on "Response and Adaptation to the Environment" (Research Triangle Park, NC, 1996).

1998 *Ad hoc* reviewer Special Emphasis Panel, National Institutes of Health.

Ad hoc member of the IFCN-4 (Integrative, Functional and Cognitive Neuroscience-4) Study Section, National Institutes of Health.

1999- 2003 Member of the IFCN-4 (Integrative, Functional and Cognitive Neuroscience-4) Study Section, National Institutes of Health.

1999 Participant in the Annual Review and member of the Advisory Review Committee of the Multidisciplinary Research Program of the University Initiative (MURI) of the Department of Defense on "Understanding Olfaction: From Detection to Classification" at the Division of Biology, California Institute of Technology, Pasadena, CA.

2000 Invited participant in the conference on "Chemical Ecology in the Postgenomic Era" at Ringberg Castle, Max Planck Institute, Germany.

Chair of a Symposium on "Olfaction in Drosophila: from Receptors to Behavior" at the XXIInd meeting of the Association for Chemoreception Sciences (Sarasota, FL)

2001 Invited participant in the conference on "Quantitative Evolutionary Genetics: Drosophila in the Post-Genome Era" at the Fondation Les Treilles, France.

Invited participant at the External Advisory Committee meeting of the Center for Behavioral Neuroscience at Emory University and invited speaker in the Atlanta Chapter for the Society of Neuroscience Spring Symposium on "Olfactory Coding, Plasticity, and Memory."

Ad hoc member of the NIH Small Business Innovative Research (SBIR) grant Study Sections (April and July, 2001)

Chair of the session on "The Vomeronasal Signal" at the Gordon Research Conference on Chemical Senses: Taste & Smell, Salve Regina University, Newport, RI.

NIH Special Emphasis Panel ZRG1-IFCN5-07

Participation in the Annual Biomedical Research Conference for Minority Students (Orlando, FL)

2002 NIH Special Emphasis Panel

2003 NIH fellowship review panel ZRG1-F02B

Consultant at the Bascom Palmer Eye Institute, University of Miami, to deliver a workshop on techniques of oral scientific presentation.

Invited participant to the National Academies Keck Futures Initiative Conference, Arnold and Mabel Beckman Center, Irvine, CA.

Participation in the Annual Biomedical Research Conference for Minority Students (San Diego, CA)

2003-2004 Member of the NIH Somatosensory and Chemosensory Systems (formerly IFCN-4) Study Section.

2004 Participation in the Annual Biomedical Research Conference for Minority Students (Dallas, TX)

Workshop on techniques of oral scientific presentation at CIIT Health Science Center, Research Triangle Park, NC.

Organizer and moderator of the 2004 W. M. Keck Center for Behavioral Biology Professional Development Workshop on "Science Writing for Success", NCSU College of Veterinary Medicine, Raleigh, NC.

2004-2006 Member of the Advisory Committee of the NIH sponsored Research Infrastructure for Minority Institutions (RIMI) program at Alabama State University.

2005 Workshop on techniques of oral scientific presentation at Michigan State University (East Lansing, MI).

Ad hoc reviewer of the NIH Somatosensory and Chemosensory Systems Study Section and the NIMH Conte Center Review panel (ZMHI ERB-S (08)).

Invited speaker at the University of Leuven and the University of Antwerp (Belgium).

Chair of a symposium on "The Genetic Basis of Phenotypic Variation in Behavior in *Drosophila melanogaster*"at the International Behavioral and Neural Genetics Society Conference (Sitges, Spain).

Participant in the Gordon Research Conference on Evolutionary and Ecological Functional Genomics (Oxford, UK).

Invited speaker at a workshop entitled "Brain: Genes & Behaviour" at Lund University (Sweden).

2006 Participant and session chair in the Gordon Research Conference on Genes and Behavior (Ventura, CA).

Invited symposium speaker at the 49th Annual Conference of The Genetics Society of Canada (London, Ontario, Canada) and the 17th International Congress of Eye Research (Buenos Aires, Argentina).

Invited speaker to present a workshop on oral scientific presentation during the annual retreat of the Department of Human Genetics, University of Michigan, Ann Arbor.

Professional Awards and Special Recognitions:

1972 Hebrew University Study Prize

1977-1982 Tuition Scholarship and Earle C. Anthony Scholarship, University of California, San Diego

1982 Martin Kamen award for most outstanding doctoral theses, University of California, San Diego

2000 Faculty Resource Development Award, College of Agriculture and Life Sciences,

North Carolina State University

Professional Affiliations:

1. Society for Neuroscience
2. North Carolina Chapter of the Society for Neuroscience
3. American Association for the Advancement of Science
4. Association for Chemoreception Sciences
5. The Genetics Society of America
6. The International Behavioral and Neural Genetics Society
7. The American Society of Human Genetics

Teaching responsibilities:

1987-1988	Graduate Student Seminar in Physiology (PHY 280) Course Director.
1989-1993	Graduate Student Seminar in Neurobiology (NBI 280) Course Director.
1989-1993	Basic Neurobiology (NBI 202) lectures on "Chemical Senses".
1988, 1989	Neurobiology of Sensory Systems (PHY 225/ANA 225; NBI 225/CBI 225) lectures on "Chemical Senses."
1990, 1991	Systems Neurobiology: Anatomy and Physiology of the Central Nervous System (NBI 209) lectures on "Chemical Senses."
1994, 1995	Macromolecular Structure (BCH 601) lectures on "Structure and Function of Membrane Proteins."
1995, 1996	Graduate Student Seminar in Biochemistry (BCH 691) Course Director.
1995	BCH 605, lectures on G-proteins and G-protein coupled receptors
1995	Keynote speaker at the College of Veterinary Medicine First Annual Teaching Effectiveness Workshop (North Carolina State University, Raleigh, NC, August 18, 1995).
1996	Discussion Leader ("communicating effectively in the classroom") at the College of Veterinary Medicine Second Annual Teaching Effectiveness Workshop (North Carolina State University, Raleigh, NC, August 19, 1996)

1997-2005	ZO421 “Principles of Physiology” (undergraduate lecture course)
1997	ZO592N “Sensory Physiology” (graduate course)
1997	Discussion Leader (“Communicating effectively in the classroom”) at the College of Veterinary Medicine Third Annual Teaching Effectiveness Workshop (North Carolina State University, Raleigh, NC, November 25, 1997)
1997-2001	Seminars in the Crosstalk series of the NCSU Graduate School on Techniques of Oral Scientific Presentation.
1999	ZO824D “Sensory Physiology” (graduate course)
2000	Cold Spring Harbor Course, Neurobiology of Drosophila, lectures and lab on Drosophila olfaction.
2002	Lectures on organization of NIH and techniques of oral scientific presentation in the biotechnology professional development course.
2004	Summer Institute for Statistical Genetics (North Carolina State University, Raleigh); Instructor for a three-day module on Behavior Genetics.
	European Institute for Statistical Genetics (University of Algarve, Faro, Portugal) Instructor for a three-day module on Behavior Genetics.
2005	GN820D “Professional Development” (graduate course taught together with Dr. Trudy Mackay)

Committee Assignments:

1988-1992	Admissions Committee of the Cell and Molecular Biology Program
1989-1992	Admissions Committee, Department of Neurobiology, Graduate Program
1989/1990	Department of Neurobiology Seminar Committee
1991-1992	Admissions Committee for the Medical Scientist Training Program
1991/1992	Faculty Research Seminar Committee
1996-1999	CALS Molecular Genetics Facility Advisory Planning Committee
1996	Department of Zoology Space and Facility Planning Committee
1997-1998	Chair, Department Seminar Committee, Department of Zoology, NCSU

Chair, Cell Biology Faculty Search Committee, Department of Zoology

1997-present Coordinator, Invited Seminars for the W. M. Keck Center for Behavioral Biology

1998-2000 CALS Research Committee

2000-2001 Molecular Genetics Faculty Search Committee, Department of Genetics, NCSU

2002- present Research Ethics Committee

2004-2005 Functional Genomics Admissions Committee

Previous, current and pending grant support:

1. NIH New Investigator Research Award R23-NS-24521 (8/1/86-7/31/88) "Primary events in olfactory reception" $71,000 direct cost, $34,500 indirect cost, 105,500 total cost

2. NIH First Independent Research Support and Transition Award R29-DC00394 (8/1/88-7/31/92) "Primary events in olfactory reception" $278,478 direct cost, $132,827 indirect cost, $411,305 total cost.

3. U.S. Army Research Office grant DAAL03-86-K-0130 (8/1/86-7/31/89) "Primary events in olfactory reception" $148,915 direct cost, $74,459 indirect cost, $223,374 total cost.

4. U.S. Army Research Office grant DAAL03-89-K-0178 (9/30/89-9/29/92) "Primary events in olfactory reception" $205,652 direct cost, $94,348 indirect cost, $300,000 total cost.

5. North Carolina Biotechnology Center Grant 87-G-02303 (5/1/87-11/30/88) "Mechanisms of bitter taste transduction" $24,000 direct cost, $5,000 indirect cost, $29,000 total cost.

6. NATO Collaborative Research Grant CRG-890435 (7/5/89-7/4/91) "Characterization of odorant-activated ion channels" $6,323 direct cost only to support collaborative research with Dr. Anna Menini (C.N.R., Genova, Italy).

7. NIH Program Project Grant 5P01-AG05128 "Steroids in Alzheimer's Disease" (8/1/90-4/1/91) $8,320 direct cost to support a pilot study as part of the Alzheimer's Center's Program Project grant (A. Roses, M.D. program director).

8. NSF grant DIR-87-15932 (6/1/89-8/31/90) Instrumentation grant for the acquisition of an ultracentrifuge $42,000.

9. NIH grant 1S15-HL-44029 (9/1/89-8/31/90) Instrumentation grant for the acquisition of a Rainin HPLC system (Department of Neurobiology), a stop-flow spectrophotometer (Department of Biochemistry) and a system to measure muscle contraction (Department of Cell Biology) $90,722.

10. Co-Principal Investigator on Office of Naval Research Grant N00014-87-K-0544 to Dr. Sidney A. Simon "Functional reconstitution of the olfactory membrane (4/1/87-9/30/90) $206,639 direct cost, $93,158 indirect cost, $299,797 total cost.

11. Co-Principal Investigator on a grant form the Nutrasweet Company to Dr. Susan S. Schiffman "Molecular physiology of gustation" (7/13/88-8/14/90) $61,420 direct cost, $15,355 indirect cost, $76,775 total cost.

12. NIH grant 2R55-DC00394 "Transduction-excitation coupling in olfaction" (9/30/92-9/29/94) $100,000 total cost, $80,000 direct cost, $20,000 indirect cost.

13. U.S. Army Research Office grant DAAL03-92-G-0390, reclassified as DAAH04-94-G-0027, "Functional characterization of odorant receptors" (9/1/92-12/14/95) $330,451 total cost, $219,132 direct cost, $111,319 indirect cost.

14. NIH grant 1R01-DC02485 "Molecular genetics of olfaction in Drosophila" (1/1/95-12/31/97) $550,018 total cost, $376,758 direct cost, $173,260 indirect cost.

15. U.S. Army Research Office grant DAAH04-96-I-0096 "Molecular mechanisms of odor recognition" (05/01/96-4/30/99) $240,000 total cost, $188,236 direct cost, $51,764 indirect cost.

16. North Carolina Biotechnology Center Academic Research Initiation Grant 9605-ARG-0015 "Adaptation to reproductive pheromones in the domestic pig: Stimulus-dependent termination of vomeronasal transduction cascades" (7/1/96-12/31/97) $40,000 DC only.

17. W.M. Keck Foundation grant 981656 "Development of a program for behavioral biology at North Carolina State University" Proposed duration 5 years, $800,000 total cost, shared among Drs. R. R. H. Anholt, T. F. C. Mackay, J. G. Vandenbergh, C. Schal and F. L. Gould.

18. NIH grant R01-GM59469-04 "Molecular genetics of olfaction in Drosophila" (4/1/99-3/31/03) $1,165,718 total cost, $798,236 direct cost, $367,482 indirect cost.

19. College of Agriculture and Life Sciences Competitive Research Grant "Characterization of a novel family of extracellular matrix proteins with olfactomedin homology domains" (7/1/98-6/30/99) $15,000 total cost.

20. Glaucoma Research Foundation Catalyst Grant "Identification of olfactomedin proteins that interact with the glaucoma associated TIGR/MYOC protein: Potential effect of their interaction on outflow facility" (10/01/99-09/30/01; PI, Dr. Teresa Borrás, Duke University Medical Center) $95,470 total cost (direct cost only), $30,157 share of R. Anholt.

21. North Carolina Biotechnology Center ARIG Program 2000 “New targets for biotechnology-driven urban pest control: Identification of cockroach pheromone binding proteins” (7/1/00 -12/31/01; R. Anholt, PI, C. Schal, Co-PI) $44,500.

22. NIH grant R01-GM59469-08 “Molecular genetics of olfaction in Drosophila” (4/1/03-3/31/08) $1,314,281 total cost, $900,000 direct cost, $414,281 indirect cost.

23. NIH grant R01-EY015873 “Comparative genomics of glaucoma” (4/1/05 - 3/31/10) $2,008,973 total cost, 1,390,952 direct cost, $618,021 indirect cost (subcontract with the University of North Carolina at Chapel Hill).

24. NIH grant R21-AA015348 “Genetics of alcohol sensitivity in Drosophila” (12/01/04-11/30/06) $401,500 total costs, $275,000 direct costs, $126,500 indirect costs. PI, Dr. Trudy F. C. Mackay.

25. NIH grant R03-TW007070 “Molecular genetics of olfaction in Drosophila” (07/01/05-6/30/08) $96,000 direct cost, $28,155 indirect cost, $124,155 total cost. This is a Fogarty International Research Collaboration Award with Dr. Juan-José Fanara at the University of Buenos Aires, Argentina.

26. UNC Office of the President “Training in Behavioral Genomics” (03/01/05-2/29/08) $450,000 direct cost only. This is a training grant with five co-investigators for training in behavioral genomics in the W. M. Keck Center for Behavioral Biology.

27. NIH grant R01-GM076083 “Genetics of aggression in Drosophila” (07/01/06-06/30/10) $768,000 direct cost, $353,280 indirect cost, $1,121,280 total cost. PI, Dr. Trudy F. C. Mackay.