

CURRICULUM VITAE

NAME: Linda B. Buck

ADDRESS: Fred Hutchinson Cancer Research Center
Division of Basic Sciences, A3-020
1100 Fairview Avenue North
Seattle, WA 98109-1024
Phone: 206-667-6316
Fax: 206-667-1031
e mail: lbuck@fhcrc.org

PLACE OF BIRTH: Seattle, Washington

EDUCATION:

1975 B.S. Microbiology, University of Washington, Seattle, Washington
1975 B.S. Psychology, University of Washington, Seattle, Washington
1980 Ph.D. Immunology, University of Texas Southwestern Medical Center, Dallas, Texas

POSTDOCTORAL TRAINING:

1980-82 Postdoctoral Fellow in Immunology with Dr. Benvenuto Pernis, Department of Microbiology, Columbia University College of Physicians and Surgeons, New York, New York.
1982-84 Postdoctoral Fellow with Dr. Richard Axel, Columbia University College of Physicians and Surgeons, New York, New York.
1984-91 Associate, Howard Hughes Medical Institute, laboratory of Dr. Richard Axel, Columbia University College of Physicians and Surgeons, New York, New York.

ACADEMIC APPOINTMENTS:

1991-1996 Assistant Professor, Department of Neurobiology, Harvard Medical School, Boston, Massachusetts
1994-1997 Assistant Investigator, Howard Hughes Medical Institute
1996-2001 Associate Professor, Department of Neurobiology, Harvard Medical School, Boston, Massachusetts
1997-2001 Associate Investigator, Howard Hughes Medical Institute
2001-2002 Professor, Department of Neurobiology, Harvard Medical School, Boston, Massachusetts
2001- Full Investigator, Howard Hughes Medical Institute
2002- Full Member, Division of Basic Sciences, Fred Hutchinson Cancer Research Center, Seattle, Washington
2003- Affiliate Professor, Department of Physiology and Biophysics, University of Washington, Seattle, Washington

OTHER APPOINTMENTS:

2004- Associate, Neurosciences Research Program, The Neurosciences Institute,
San Diego, California

HONORS AND AWARDS:

1992 The Takasago Award for Research in Olfaction

1992 The LVMH Moet Hennessy Louis Vuitton Science for Art Prize

1992 McKnight Scholar Award from The McKnight Endowment Fund for
Neuroscience

1992 Alfred P. Sloan Research Fellowship Award

1993 Anniversary Lecture. National Institute on Deafness and Other
Communication Disorders, National Institutes of Health

1993 John Merck Scholarship in the Biology of Developmental Disabilities in
Children

1995 1995 Distinguished Alumnus, Graduate School, University of Texas
Southwestern Medical Center

1996 The Annual Segerfalk Lecture, University of Lund, Sweden

1996 The Unilever Science Award

1996 The R.H. Wright Award in Olfactory Research

1997 The Lewis S. Rosenstiel Award for Distinguished Work in Basic Medical
Research

1998 The Alicia Showalter Reynolds Memorial Lecture, Johns Hopkins University

1999 NIH Director's Lecture, National Institutes of Health

1999 The 1999 Ulf von Euler Lecture in Physiology, Karolinska Institute, Sweden

2000 Senior Scholar Award in Aging, The Ellison Medical Foundation

2002 Elected Fellow of the American Association for the Advancement of Science

2002 The 25th Annual Mildred Trotter Lecture, Washington University School of
Medicine

2003 Elected Member of the National Academy of Sciences

2003 The Perl/UNC Neuroscience Prize

2003 Gairdner Foundation International Award

2004 The Nobel Prize in Physiology or Medicine

PROFESSIONAL SOCIETIES:

- 1993- Society for Neuroscience
- 1992- Association for Chemoreception Sciences

EDITORIAL BOARDS:

- 1997- Current Opinion in Neurobiology
- 2002- Molecular and Cellular Neuroscience
- 2003- Journal of Neurobiology

BIBLIOGRAPHY:

- Storb U, Hager L, Putnam D, Buck LB, Farin F and Clagett J (1976) Sequences related to immunoglobulin kappa chain messenger RNA in T Cells. *Proc. Natl. Acad. Sci. USA* 73:2467-2471.
- Buck LB, Yuan D and Vitetta ES (1979) A dichotomy between the expression of IgD on B cells and its requirement for triggering such cells with two T-independent antigens. *J. Exp. Med.* 149:987-992.
- Vitetta E, Pure E, Isakson P, Buck LB and Uhr J (1980) The activation of murine B cells: the role of surface immunoglobulins. *Immunol. Rev.* 52:211-231.
- Vitetta ES, Cambier JC, Kettman JR, Ligler FS, Yuan D, Buck LB, Zan-Bar I, Strober S, and Uhr J (1980) The role of receptor IgM and IgD in determining triggering and induction of tolerance in murine B cells. In: *The Biological Basis of Immunodeficiency*. (E.L. Gelfand and H.M. Dosch, eds.) Raven Press, New York, p. 189.
- Roberts JM, Buck LB and Axel R (1983) A structure for amplified DNA. *Cell* 33:53-63.
- Buck LB, Stein R, Palazzolo M, Anderson DJ and Axel R (1983) Gene expression and the diversity of identified neurons. *Cold Spring Harbor Symp. Quant. Biol.* 48: 485-492.
- Buck LB, Bigelow JM and Axel R (1987) Alternative splicing in individual *Aplysia* neurons generates neuropeptide diversity. *Cell* 51:127-133.
- Weiss KR, Bayley H, Lloyd PE, Tenenbaum R, Gawinowicz-Kolks MA, Buck L, Cropper EC and Kupfermann I (1989) Purification and sequencing of neuropeptides contained in neuron R15 of *Aplysia californica*. *Proc. Natl. Acad. Sci.* 86:2913-2917.
- Hynes MA, Buck LB, Gitt M, Barondes S, Dodd J and Jessell TM (1989) Carbohydrate recognition in neuronal development: structure and expression of surface oligosaccharides and beta-galactoside-binding lectins. In: *Carbohydrate Recognition in Cellular Function*. Ciba Found. Sympos. 145. New York: John Wiley and Sons, pp 189-209.
- Hynes MA, Gitt MA, Barondes SH, Jessell TM and Buck LB (1990) Selective expression of a lactose-binding lectin gene in subsets of central and peripheral neurons. *J. Neurosci.* 10:1001-1013.
- Weber DA, Buck LB, Delohery TM, Agostino N and Pernis B (1990) Class II MHC molecules are spontaneously internalized in acidic endosomes by activated B cells. *J. Mol. Cell. Immunol.* 4:255-268.
- Alevizos A, Karagogeos D, Weiss KR, Buck LB and Koester J (1991) R15 alpha 1 and R15

- alpha 2 peptides from *Aplysia*: comparison of bioactivity, distribution, and function of two peptides generated by alternative splicing. *J. Neurobiol.* 22:405-417.
- Buck L and Axel R (1991) A novel multigene family may encode odorant receptors: a molecular basis for odor recognition. *Cell* 65:175-187.
- Buck LB (1992) A novel multigene family may encode odorant receptors. In: *Sensory Transduction.* (Corey DP and Roper SD, eds.) New York: The Rockefeller Press, pp 39-51.
- Buck LB (1992) The olfactory multigene family. *Curr. Opin. Neurobiol.* 2:282-288 and *Curr. Opin. Genet. and Dev.* 2:467-473.
- Ngai J, Dowling MM, Buck L, Axel R and Chess A (1993) The family of genes encoding odorant receptors in the channel catfish. *Cell* 72:657-666.
- Ressler KJ, Sullivan SL and Buck LB (1993) A zonal organization of odorant receptor gene expression in the olfactory epithelium. *Cell* 73:597-609.
- Buck L (1993) Identification and analysis of a multigene family encoding odorant receptors: implications for mechanisms underlying olfactory information processing. *Chem. Senses* 18:203-208.
- Buck LB (1993) Receptor diversity and spatial patterning in the mammalian olfactory system. In: *The Molecular Basis of Smell and Taste Transduction.* Ciba Found. Sympos. 179. New York: John Wiley and Sons, pp. 51-67.
- Buck LB, Firestein S, and Margolskee R (1994) Olfaction and taste in vertebrates: molecular and organizational strategies underlying chemosensory perception. In: *Basic Neurochemistry* (fifth edition). (Siegel GJ, Agranoff BW, Albers RW and Molinoff PB, eds.) New York: Raven Press, pp. 157-177.
- Ressler KJ, Sullivan SL, and Buck LB (1994) A molecular dissection of spatial patterning in the olfactory system. *Curr. Opin. Neurobiol.* 4:588-596.
- Ressler KJ, Sullivan SL, and Buck LB (1994) Information coding in the olfactory system: evidence for a stereotyped and highly organized epitope map in the olfactory bulb. *Cell* 79:1245-1255.
- Liman ER and Buck LB (1994) A second subunit of the olfactory cyclic nucleotide-gated channel confers high sensitivity to cAMP. *Neuron* 13:611-621.
- Sullivan SL, Ressler KJ and Buck LB (1995) Spatial patterning and information coding in the olfactory system. *Curr. Opin. Genet. and Dev.* 5:516-523.
- Liman ER and Buck LB (1995) Cloning of odorant receptors. In: *Experimental Cell Biology of Taste and Olfaction* (Spielman, A and Brand, J, eds.) New York: CRC Press, pp. 425-430.
- Sullivan SL, Bohm S, Ressler KJ, Horowitz LF and Buck LB (1995) Target-independent pattern specification in the olfactory epithelium. *Neuron* 15:779-789.
- Buck LB (1995) Unraveling Chemosensory Diversity. *Cell* 83:349-352.
- Buck LB (1996) Information coding in the vertebrate olfactory system. In: *Annu. Rev. of*

Neurosci. (Cowan WM, Shooter EM, Stevens CF, and Thompson RF, eds.) Palo Alto: Annual Reviews Inc, pp 517-544.

Sullivan SL, Adamson MA, Ressler KJ, Kozak CA and Buck LB (1996) The chromosomal distribution of mouse odorant receptor genes. *Proc. Natl. Acad. Sci. USA* 93:884-888.

Berghard A, Buck LB, and Liman ER (1996) Evidence for distinct signaling mechanisms in two mammalian olfactory sense organs. *Proc. Natl. Acad. Sci. USA* 93:2365-2369.

Berghard A and Buck LB (1996) Sensory transduction in vomeronasal neurons: evidence for G_αo, G_αi2, and adenylyl cyclase II as major components of a pheromone signaling cascade. *J. Neurosci.* 16:909-918.

Buck LB (1996) Information coding in the mammalian olfactory system. *Cold Spring Harbor Symp. Quant. Biol.* 61:147-155.

Matsunami H and Buck LB (1997) A multigene family encoding a diverse array of putative pheromone receptors in mammals. *Cell* 90: 775-784.

Malnic B, Hirono J, Sato T and Buck LB (1999) Combinatorial receptor codes for odors. *Cell* 96: 713-723.

Horowitz LF, Montmayeur J, Echelard Y and Buck LB (1999) A genetic approach to trace neural circuits. *Proc. Natl. Acad. Sci. USA* 96:3194-3199.

Buck LB (2000) The molecular architecture of odor and pheromone sensing in mammals. *Cell* 100: 611-618.

Matsunami H, Montmayeur J-P and Buck LB (2000) A family of candidate taste receptors in human and mouse. *Nature* 404: 601-604.

Montmayeur J-P, Liberles SD, Matsunami H and Buck LB (2001) A candidate taste receptor gene near a sweet taste locus. *Nature Neurosci.* 4:492-498.

Sam M, Vora S, Malnic B, Ma W, Novotny MV and Buck LB (2001) Odorants may arouse instinctive behaviours. *Nature* 412: 142.

Zou Z, Horowitz LF, Montmayeur J-P, Snapper S and Buck LB (2001) Genetic tracing reveals a stereotyped sensory map in the olfactory cortex. *Nature* 414:173-179.

Ranganathan R and Buck LB (2002) Olfactory axon pathfinding: who is the pied piper? *Neuron* 35:599-600.

Buck LB (2004) The search for odorant receptors. *Cell* 116: 117-119.

Godfrey PA, Malnic B, and Buck, LB (2004) The mouse olfactory receptor gene family. *Proc. Natl. Acad. Sci. USA.* 101:2156-2161.

Malnic B, Godfrey PA, and Buck LB (2004) The human olfactory receptor gene family. *Proc. Natl. Acad. Sci. USA.* 101:2584-2589.