

## Curriculum Vita

(July 2009)

### DONALD ALAN WILSON

Senior Research Scientist, Emotional Brain Institute, Nathan Kline Institute *and*  
Research Professor of Child and Adolescent Psychiatry, New York University School of Medicine *and*  
Professor of Zoology, University of Oklahoma (on leave)

### CONTACT INFORMATION

- Address: Emotional Brain Institute  
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- WWW: <http://faculty-staff.ou.edu/W/Donald.A.Wilson-1/home.html> or  
<http://www.med.nyu.edu/people/wilsod05.html>

### EDUCATIONAL BACKGROUND

- Postdoctoral Researcher, 1983-1988,  
Center for the Neurobiology of Learning and Memory, and  
Department of Psychobiology, School of Biological Sciences  
University of California at Irvine
- Doctor of Philosophy, 1983, Physiological Psychology  
McMaster University, Hamilton, Ontario, Canada
- Bachelor of Science, 1979, (Summa cum laude), Psychology  
University of Nebraska at Omaha

### ACADEMIC POSITIONS

- Senior Research Scientist, Emotional Brain Institute, Nathan Kline Institute, 2008-*present*
- Research Professor of Child and Adolescent Psychiatry, 2008-*present*  
New York University School of Medicine
- Professor, Graduate Faculty, Cognitive Neuroscience Program, City College of New York,  
City University of New York, 2008 - *present*
- Co-Director, Neurobehavioral Institute, 2003-2008  
University of Oklahoma
- Professor of Zoology with tenure, 2000-*present* (2008-2009 on leave),  
Associate Professor of Zoology with tenure 1994-2000,  
Assistant Professor of Zoology, 1990 – 1994,  
University of Oklahoma
- Adjunct Faculty, 1991 - 2008  
Oklahoma Center for Neuroscience, *and*  
Department of Psychiatry and Behavioral Sciences  
University of Oklahoma Health Sciences Center
- Assistant Professor of Psychology, 1989 - 1994  
University of Oklahoma
- Assistant Researcher (Research Assistant Professor), 1988-1989  
Department of Psychobiology, School of Biological Sciences  
University of California at Irvine

## VISITING POSITIONS

- Visiting Scholar, Department of Psychology,  
Macquarie University, Sydney, AUSTRALIA, 2005
- Visiting Researcher, Department of Physiology,  
Kochi Medical School, Kochi, JAPAN, 2004
- Visiting Scientist, Laboratoire Physiologie Neurosensorielle,  
Universite Claude Bernard, Lyon, FRANCE, 1995

## TEACHING EXPERIENCE

- Introduction to Neuroscience, upper-level zoology majors and graduate, OU
- Neurobiology of Memory, upper-level zoology/psychology majors and graduate, OU
- Sensory Functions, upper-level zoology/psychology majors, OU
- Human Physiology, pre-health majors, OU
- Physiological Psychology, upper-level psychology majors and graduate, OU

## PROFESSIONAL MEMBERSHIPS

- Association for Chemoreception Sciences
- International Society for Developmental Psychobiology
- Society for Neuroscience

## PROFESSIONAL SERVICE

### Departmental (major appointments and elected posts)

- Assistant Chair, Department of Zoology, 2003-2008
- ad hoc Undergraduate Curriculum Committee (Chair), 2006-2007
- Strategic Planning Committee, Department of Zoology, (Chair), 2005
- Committee A (elected Executive committee), Department of Zoology, 1997-1999, 2007-2008
- Graduate admissions committee,  
Department of Psychology, 1989-1993 (Chair, 1991-1993)  
Department of Zoology, 1996-1998, 1999-2000
- Faculty search committee  
Department of Zoology, 1996-2001, 2006 (Chair of multiple searches)

### University

- Advisory committee, Oklahoma Center for Neurosciences, 1999-2006
- Mentor, McNair Scholars Program, 2002-2003
- University of Oklahoma Institutional Animal Care and Use Committee, 1999-2008
- Executive committee, Oklahoma Center for Neurosciences, 1990-1999
- Curriculum committee, Oklahoma Center for Neurosciences, 1991-1995
- University of Oklahoma Research Council, 1998-2001, elected Chair, 2000-2001
- University of Oklahoma Speakers Service, 1990-1999

### National/International

- President-elect, Association for Chemoreception Sciences, 2009
- Editorial Board, *Neural Plasticity*, 2006-present
- Editorial Advisory Board, *Encyclopedia of Perception*, 2006-present
- Membership chair, Association for Chemoreception Sciences, 2004-2006
- Program Chair for Association for Chemoreception Sciences 2009 annual meeting
- Program committee member, Association for Chemoreception Sciences meeting, 2004
- Board member, International Society for Developmental Psychobiology, 2003-2005
- Member, IFCN4 study section, National Institutes of Health, 2000-2003
- ad hoc Member, IFCN4/SCS study section, National Institutes of Health, 1998-2000, 2003
- Special Emphasis Panel Member, National Institutes of Health, 2004-present  
NIMH, Autism STAART Centers, 2002  
NIDCD, Fellowship Program, 1998  
NIDCD, Small Grants Program, 1996, 2006-2008 (Study section chair)
- NIH Neuroscience Blueprint, member Olfaction consensus terminology workshop, 2007
- Organizer, Symposium: *Cortical information processing in the olfactory system*,  
Association for Chemoreception Sciences annual meeting, Sarasota, FL, April 2000
- Organizer, Symposium: *Sensory gating: From genes to behavior*  
Current Issues in Developmental Psychobiology Winter Conference, Costa Rica, January  
2007

- Co-organizer, Symposium: *Olfaction beyond the olfactory bulb: From perception to memory* Association for Chemoreception Sciences annual meeting, Sarasota, FL, April 2007
- Grass Foundation Traveling lecturer, Santiago, Chile chapter, September 2006
- ad hoc reviewer, National Science Foundation, multiple journals

## RESEARCH INTERESTS

- Perceptual learning, neurobiology of memory, ontogeny of memory
- Olfactory system sensory physiology, development and plasticity
- Cognitive neuroscience/behavioral neuroscience

## RESEARCH FUNDING (\* = ongoing)

1. National Science Foundation, "Olfactory system plasticity", BNS 8606786, 9/1/86 - 8/31/89, \$169,087 total award
2. National Science Foundation, "Neural plasticity induced by early olfactory learning", BNS 8819189, 9/1/89 - 8/31/92, \$134,108 total award  
Research Education for Undergraduates Supplement to BNS881989, 9/1/90-8/31/91, \$2,000 total award
3. National Institutes of Health, "Functional consequences of early olfactory deprivation", (Regina M. Sullivan, co-P.I.) RO1-DC00866, 4/1/91-9/30/94, \$159,253 total award  
Minority supplement to RO1-DC00866 (Regina M. Sullivan, co-P.I.), 7/1/92 - 3/31/94, \$27,213 total award
4. National Science Foundation, "Neural plasticity induced by early olfactory learning", BNS 9209929, 9/1/92 - 8/31/94, \$71,375 total award
5. National Institutes of Health, "Neural plasticity and early olfactory learning", RO1-DC01674, 9/1/93-8/31/97, \$204,760 total award
- \*6. National Institutes of Health, "Cortical processing of olfactory stimuli", RO1-DC03906, 12/1/98-11/30/02, \$420,427 total award.  
Competing renewal 12/1/02-11/30/07, \$852,351 total renewal award  
Competing renewal 12/1/07-11/30/12, \$1,554,349 total renewal award
7. National Science Foundation, "Functional consequences of olfactory deprivation", IBN9808149, 1/15/99-12/31/02, \$97,685 total award  
Research Education for Undergraduates Supplement to IBN9808149, 1/15/01-12/31/02, \$4,250 total award
8. Oklahoma Center for the Advancement of Science and Technology, "Neurobiology of perceptual learning", HR02-136R, 7/1/02-6/30/05, \$133,086
9. Brain Science Foundation, Japan. Collaborative research with Hideto Kaba, Kochi, Japan, 4/1/04-8/1/04, 250,000 Yen
10. National Science Foundation, "Computational, physiological and behavioral analysis of cortical adaptation in olfaction", CNS 0338981, 8/15/04-7/31/08 (Christiane Linster, Cornell University, P.I.), \$402,895 total award.
11. National Institutes of Health, "Ensemble coding in olfactory cortex", R21DC007112, 7/1/05-6/30/08, \$394,211 total award.
12. National Alliance for Autism Research/Autism Speaks, "Functional consequences of sensory gating deficits", 7/1/05-3/30/08, \$117,135 total award.
- \*13. National Institutes of Health, "Ensemble coding in olfactory cortex", R01DC008982, 7/1/08-6/30/13, (Multiple PI award with Robert Rennaker, University of Oklahoma), \$1,868,595 total award.

## ORIGINAL RESEARCH (peer reviewed)

1. Wilson, D.A. and Racine, R.J. The postnatal development of post-activation potentiation in the rat neocortex. *Developmental Brain Research*, 1983, **7**: 271-276.
2. Wilson, D.A. A comparison of the postnatal development of post-activation potentiation in the neocortex and dentate gyrus of the rat. *Developmental Brain Research*, 1984, **16**: 61-68.
3. Wilson, D.A. and Racine, R.J. Barbiturate-enhanced paired-pulse depression in neonatal rats. *Neuroscience Letters*, 1985, **56**: 101-106.

4. Wilson, D.A., Sullivan, R.M. and Leon, M. Odor familiarity alters mitral cell response in the olfactory bulb of neonatal rats. *Developmental Brain Research*, 1985, **22**: 314-317.
5. Wilson, D.A. and Leon, M. Early appearance of inhibition in the neonatal rat olfactory bulb. *Developmental Brain Research*, 1986, **26**: 289-292.
6. Racine, R.J., Wilson, D.A., \*Gingell, R. and Sunderland, D. Long-term potentiation in the interpositus and vestibular nuclei in the rat. *Experimental Brain Research*, 1986, **63**: 158-162.
7. Wilson, D.A., Willner, J. Kurz, E. and Nadel, L. Early handling increases hippocampal long-term potentiation in young rats. *Behavioral Brain Research*, 1986, **21**: 223-227.
8. Wilson, D.A. and Leon, M. Abrupt decrease in synaptic inhibition in the postnatal rat olfactory bulb. *Developmental Brain Research*, 1987, **33**: 134-138.
9. Wilson, D.A. and Leon, M. Evidence of lateral synaptic interactions in olfactory bulb output cell responses to odors. *Brain Research*, 1987, **417**: 175-180.
10. Wilson, D.A., Sullivan, R.M. and Leon, M. Single-unit analysis of postnatal olfactory learning: Modified olfactory bulb output response patterns to learned attractive odors. *Journal of Neuroscience*, 1987, **7**: 3154-3162.
11. Sullivan, R.M., Wilson, D.A. and Leon, M. Physical stimulation decreases brain temperature in infant rats. *Developmental Psychobiology*, 1988, **21**: 237-250.
12. Wilson, D.A. and Leon, M. Spatial patterns of olfactory bulb single-unit responses to learned olfactory cues in young rats. *Journal of Neurophysiology*, 1988, **59**: 1770-1782.
13. Wilson, D.A. and Leon, M. Noradrenergic modulation of olfactory bulb excitability in the postnatal rat. *Developmental Brain Research*, 1988, **42**: 69-75.
14. Sullivan, R.M., Wilson, D.A., \*Kim, M.H. and Leon, M. Behavioral and neural correlates of postnatal olfactory conditioning: I. Effect of respiration on conditioned neural responses. *Physiology and Behavior*, 1988, **44**: 85-90.
15. Sullivan, R.M., Wilson, D.A. and Leon, M. Associative processes in early olfactory preference acquisition: Neural and behavioral consequences. *Psychobiology*, 1989, **17**: 29-33.
16. Sullivan, R.M., Wilson, D.A. and Leon, M. Norepinephrine and learning-induced plasticity in infant rat olfactory system. *Journal of Neuroscience*, 1989, **9**: 3998-4006.
17. Wilson, D.A. and Sullivan, R.M. Olfactory associative conditioning in infant rats with brain stimulation as reward. I. Neurobehavioral consequences. *Developmental Brain Research*, 1990, **53**: 215-221.
18. Sullivan, R.M., Wilson, D.A., \*Wong, R., \*Corrian, A. and Leon, M. Modified behavioral and olfactory bulb responses to maternal odors in preweanling rats. *Developmental Brain Research*, 1990, **53**: 243-247.
19. Wilson, D.A., Guthrie, K.M. and Leon, M. Modification of olfactory bulb synaptic inhibition by early unilateral olfactory deprivation. *Neuroscience Letters*, 1990 **116**: 250-256.
20. Guthrie, K.M., Wilson, D.A. and Leon, M. Unilateral olfactory deprivation modifies olfactory bulb function. *Journal of Neuroscience*, 1990, **10**: 3402-3412.
21. Sullivan, R.M. and Wilson, D.A. Neural correlates of conditioned odor avoidance in preweanling rats. *Behavioral Neuroscience*, 1991, **105**: 85-90.
22. Wilson, D.A. and Sullivan, R.M. Olfactory associative conditioning in infant rats with brain stimulation as reward. II. Norepinephrine mediates a specific component of the bulb response to reward. *Behavioral Neuroscience*, 1991, **105**: 843-849.
23. Sullivan, R.M. and Wilson, D.A. The role of norepinephrine in the expression of learned olfactory neurobehavioral responses in infant rats. *Psychobiology*, 1991, **19**:308-312.
24. Wilson, D.A. and Wood, J.G. Functional consequences of unilateral olfactory deprivation: Time course and age sensitivity. *Neuroscience*, 1992, **49**:183-192.
25. Wilson, D.A. and Sullivan, R.M. Blockade of mitral/tufted cell habituation to odors by association with reward: A preliminary note. *Brain Research*, 1992, **594**:143-145.
26. Sullivan, R.M., \*Zyzak, D.R., Skierkowski, P. and Wilson, D.A. The role of olfactory bulb norepinephrine in early olfactory learning. *Developmental Brain Research*, 1992, **70**:279-282.
27. Sullivan, R.M. and Wilson, D.A. The role of the amygdala complex in early olfactory associative learning. *Behavioral Neuroscience*, 1993, **107**:254-263.
28. Hamrick, W.D., Wilson, D.A. and Sullivan, R.M. Neural correlates of memory for odor detection conditioning in adult rats. *Neuroscience Letters*, 1993, **163**: 36-40.
29. Racine, R.J., Wilson, D.A., Teskey, G.C., Milgram, N.W. Post-activation potentiation in the neocortex: I. Acute preparations. *Brain Research*, 1994, **637**:73-82.
30. Racine, R.J., Teskey, G.C., Wilson, D.A., Seidlitz, E. and Milgram, N.W. Post-activation potentiation and depression in the neocortex of the rat: II. Chronic preparations. *Brain Research*, 1994, **637**:83-96.
31. Sullivan, R.M., Wilson, D.A., \*Lemon, C. and Gerhardt, G.A. Bilateral 6-OHDA lesions of the locus coeruleus impair associative olfactory learning in newborn rats. *Brain Research*, 1994, **643**:306-309.
32. Wilson, D.A., \*Pham, T.-C. and Sullivan, R.M. Norepinephrine and post-training memory consolidation in neonatal rats. *Behavioral Neuroscience*, 1994, **108**:1-6.

33. Sullivan, R.M. and Wilson, D.A. Dissociation of behavioral and neural correlates of early associative learning. *Developmental Psychobiology*, 1995, **28**:213-219.
34. Wilson, D.A. NMDA receptors mediate expression of one form of functional plasticity induced by olfactory deprivation. *Brain Research*, 1995, **677**:238-242.
35. Wilson, D.A. and Sullivan, R.M. The D2 antagonist spiperone mimics the effects of olfactory deprivation on mitral/tufted cell odor response patterns. *Journal of Neuroscience*, 1995, **15**: 5574-5581.
36. Woo, C.C., Wilson, D.A., Sullivan, R.M. and Leon, M. Early locus coeruleus lesions increase density of beta-adrenergic receptors in the main olfactory bulb of rats. *International Journal of Developmental Neuroscience*, 1996, **14**:913-919.
37. Wilson, D.A., Sullivan, R.M., Gall, C.M. and Guthrie, K.M. NMDA-receptor modulation of lateral inhibition and c-fos expression in olfactory bulb. *Brain Research*, 1996, **719**:62-71.
38. Wilson, D.A. Bi-nasal interactions in the rat piriform cortex. *Journal of Neurophysiology*, 1997, **78**:160-169.
39. Wilson, D.A. Habituation of odor responses in the rat anterior piriform cortex. *Journal of Neurophysiology*, 1998, **79**: 1425-1440.
40. Wilson, D.A. Synaptic correlates of odor habituation in the rat anterior piriform cortex. *Journal of Neurophysiology*, 1998, **80**: 998-1001.
41. Wilson, D.A. and Sullivan, R.M. Respiratory airflow pattern at the rat's snout and an hypothesis regarding its role in olfaction. *Physiology and Behavior*, 1999, **66**:41-44.
42. Young, T.A. and Wilson, D.A. Frequency-dependent modulation of inhibition in the rat olfactory bulb. *Neuroscience Letters*, 1999, **276**:65-67.
43. Chabaud, P., Ravel, N., Wilson, D.A. and Gervais, R. Functional coupling in rat central olfactory pathways: a coherence analysis. *Neuroscience Letters*, 1999, **276**:17-20.
44. Wilson, D.A. Odor specificity of habituation in the rat anterior piriform cortex. *Journal of Neurophysiology*, 2000, **83**: 139-145.
45. Wilson, D.A., \*Best, A.R. and Brunjes, P.C. Trans-neuronal modification of anterior piriform cortical circuitry in the rat. *Brain Research*, 2000, **853**:317-322.
46. Sullivan, R.M., Stackenwalt, G., \*Nasr, F., \*Lemon, C. and Wilson, D.A. Association of an odor with activation of olfactory bulb noradrenergic  $\beta$ -receptors or locus coeruleus stimulation is sufficient to produce learned approach responses to that odor in neonatal rats. *Behavioral Neuroscience*, 2000, **114**:957-962.
47. Chabaud, P., Ravel, N., Wilson, D.A., Mouly, A.M., Vigouroux, M., Farget, V. and Gervais, R. Exposure to behaviourally relevant odour reveals differential characteristics in rat central olfactory pathways as studied through oscillatory activities. *Chemical Senses*, 2000, **25**:561-573.
48. Sullivan, R.M., Landers, M., \*Yeaman, B. and Wilson, D.A. Good memories of bad events in infancy. *Nature*, 2000, **407**: 38-39.
49. Wilson, D.A. A comparison of odor receptive field plasticity in the rat olfactory bulb and anterior piriform cortex. *Journal of Neurophysiology*, 2000, **84**:3036-3042.
50. Wilson, D.A. Scopolamine enhances generalization between odor representations in rat olfactory cortex. *Learning and Memory*, 2001, **8**:279-285.
51. Fletcher, M.L. and Wilson, D.A. Ontogeny of odor discrimination: A method to assess novel odor discrimination in neonatal rats. *Physiology and Behavior*, 2001, **74**:589-593.
52. Fletcher, M.L. and Wilson, D.A. Experience modifies olfactory acuity: ACh-dependent learning decreases behavioral generalization between similar odors. *Journal of Neuroscience*, 2002, **22**:RC201(1-5).
53. Best, A.R. and Wilson, D.A. A postnatal sensitive period for plasticity of cortical afferents but not cortical association fibers in rat piriform cortex. *Brain Research*, 2003, **961**:81-87.
54. Wilson, D.A. Rapid, experience-induced enhancement in odorant discrimination by anterior piriform cortex neurons. *Journal of Neurophysiology*, 2003, **90**:65-72.
55. Leung, C.H.W. and Wilson, D.A. Trans-neuronal regulation of cortical apoptosis in the adult rat olfactory system. *Brain Research*, 2003, **984**:182-188.
56. Fletcher, M.L. and Wilson, D.A. Olfactory bulb mitral/tufted cell plasticity: Odorant-specific tuning reflects prior odorant exposure. *Journal of Neuroscience*, 2003, **23**:6946-6955.
57. Best, A.R. and Wilson, D.A. Coordinate synaptic mechanisms contributing to olfactory cortical adaptation. *Journal of Neuroscience*, 2004, **24**:652-660.
58. Fletcher, M.L., \*Smith, A.M., Best, A.R. and Wilson, D.A. High frequency oscillations are not necessary for simple olfactory discriminations in young rats. *Journal of Neuroscience*, 2005, **25**:792-798. (Highlighted in "This Week in the Journal").
59. Best, A.R., \*Thompson, J.V., Fletcher, M.L. and Wilson, D.A. Cortical metabotropic glutamate receptors contribute to habituation of a simple odor-evoked behavior. *Journal of Neuroscience*, 2005, **25**: 2513-2517.
60. \*Thompson, J.V., Best, A.R. and Wilson, D.A. Ontogeny of cortical synaptic depression underlying olfactory sensory gating in the rat. *Developmental Brain Research*, 2005, **158**:107-110.
61. \*Yadon, C.A. and Wilson, D.A. The role of metabotropic glutamate receptors and cortical adaptation in habituation of odor-guided behavior. *Learning and Memory*, 2005, **12**:601-605.

62. Roth, E.D., Lutterschmidt, W.I. and Wilson, D.A. Relative medial and dorsal cortex volume in relation to sex differences in spatial ecology of a snake population. *Brain, Behavior and Evolution*, 2006, **67**:103-110.
63. Kadohisa, M. and Wilson, D.A. Olfactory cortical adaptation facilitates detection of odors against background. *Journal of Neurophysiology*, 2006, **95**:1888-1896.
64. Moriceau, S., Wilson, D.A., Levine, S. and Sullivan, R.M. Dual circuitry for odor-shock conditioning during infancy: Corticosterone switches between fear and attraction via amygdala. *Journal of Neuroscience*, 2006: **26**:6737-6748. (Highlighted in “This Week in the Journal”).
65. Kadohisa, M. and Wilson, D.A. Separate encoding of identity and similarity of complex familiar odors in piriform cortex. *Proceedings of the National Academy of Sciences (USA)*, 2006, **103**:15206-15211. (Commentary: Leon, M. and Johnson, B. Functional units in the olfactory system. *PNAS*, **103**:14985-14986.)
66. Linster, C. \*Henry, L., Kadohisa, M. and Wilson, D.A. Synaptic adaptation and odor-background segmentation. *Neurobiology of Learning and Memory*, 2007, **87**:352-360.
67. Rennaker, R.L., \*Miller, J., Tang, H. and Wilson, D.A. Minocycline increases quality and longevity of chronic neural recordings. *Journal of Neural Engineering*, 2007, **4**:L1-L5.
68. Rennaker, R.L., Chen, C.-F. F, Ruyle, A., Sloan, A.M. and Wilson, D.A. Spatial and temporal distribution of odorant-evoked activity in the piriform cortex. *Journal of Neuroscience*, 2007, **27**:1534-1542.
69. \*Pope, K. and Wilson, D.A. Olfactory system modulation of hippocampal cell death, *Neuroscience Letters*, 2007, **422**:13-17.
70. McNamara, A.M., Magidson, P.D., Linster, C., Wilson, D.A. and Cleland, T.A. Distinct neural mechanisms mediate olfactory memory formation at different timescales. *Learning and Memory*, 2008, **15**:117-125.
71. \*Thompson, J.V., Sullivan, R.M. and Wilson, D.A. Developmental emergence of fear learning corresponds with changes in amygdala synaptic plasticity. *Brain Research*, 2008, **1200**:58-65.
72. Bell, H., \*Chenoweth, B. and Wilson, D.A. Neurobehavioral consequences of cortical adaptation disruption during ontogeny. *Neuroscience Letters*, 2008, **445**:47-52.
73. \*Barnes, D., \*Hofacer, R., \*Zaman, A., Rennaker, R.L. and Wilson, D.A. Olfactory perceptual stability and discrimination. *Nature Neuroscience*, 2008, **11**: 1378-1380. (Highlighted in “News & Views”, pg. 1372. Also, Faculty of 1000 Biology evaluations: <http://www.f1000biology.com/article/id/1160961/evaluation>)
74. \*Smith, J.J., Shionoya, K., Sullivan, R.M. and Wilson, D.A. Auditory stimulation dishabituates olfactory responses via noradrenergic cortical modulation. *Neural Plasticity*, Volume 2009, Article ID 754014, 6 pages doi:10.1155/2009/754014.
75. Linster, C., Melon, A., Singh, C. and Wilson, D.A. Odor-specific habituation arises from interaction of afferent synaptic adaptation and intrinsic synaptic potentiation in olfactory cortex. *Learning and Memory*, 2009, **16**:452-459.

\*undergraduate authors

## BOOK

- Wilson, D.A. and Stevenson, R. J. *Learning to Smell: Olfactory perception from neurobiology to behavior*. Johns Hopkins University Press, 336 pages, 2006.
- Reviewed, various including: Khan, R.M. and Sobel, N. How the nose knows what it knows, *Nature Neuroscience*, 2007, 10:7.
- Translated into Japanese, Fragrance Journal Publishers, 2009.

## REVIEWS and BOOK CHAPTERS

1. Leon, M., Coopersmith, R., Lee, S., Sullivan, R.M., Wilson, D.A. and Woo, C. Neural and behavioral plasticity induced by early olfactory learning. In N. Krasnegor, E. Blass, M. Hofer and W. Smotherman (Eds.), *Perinatal Development: A Psychobiological Perspective*, Academic Press, New York, 1987, 145-167.
2. Wilson, D.A. and Leon, M. Information processing in the olfactory system. In J.S. Lund (Ed.), *Sensory Processing in the Mammalian Brain: Neural Substrates and Experimental Strategies*, Oxford University Press, New York, 1989, 7-22.
3. Wilson, D.A., Sullivan, R.M. and Leon, M. A search for the neural mechanisms of olfactory learning in postnatal rats. In H. Shair, G. Barr and M. Hofer (Eds.), *Developmental Psychobiology: Current Methodological and Conceptual Issues*, Oxford University Press, New York, 1991, 287-302.
4. Leon, M., Wilson, D.A. and Guthrie, K.M. Plasticity in the developing olfactory system. In J. Davis and H. Eichenbaum (Eds.), *Olfaction as a Model System for Computational Neuroscience*, MIT Press, Cambridge, MA, 1991, 121-140.
5. Wilson, D.A. and Sullivan, R.M. Neurobiology of associative learning in the neonate: Early olfactory learning. *Behavioral and Neural Biology*, 1994, **61**:1-18.
6. Sullivan, R.M. and Wilson, D.A. The locus coeruleus, norepinephrine and memory in newborns. *Brain Research Bulletin*, 1994, **35**:467-472.
7. Wilson, D.A. and Sullivan, R.M. Peripheral mechanisms of smell. R.W.A. Linden (Ed.), *Frontiers of Oral Biology, Volume 9: The Scientific Basis of Eating*, Karger, Basel Switzerland, 1998, 29-39.

8. Wilson, D.A. Receptive fields in rat primary olfactory cortex. *Chemical Senses*, 2001, **26**: 577-584.
9. Wilson, D.A. and Sullivan, R.M. Sensory physiology of central olfactory pathways. In R.L. Doty (Ed.) *Handbook of Olfaction and Gustation*, 2<sup>nd</sup> Edition, Marcel Dekker, Inc., 2003, 181-201.
10. Wilson, D.A. and Stevenson, R.J. The fundamental role of memory in olfactory perception. *Trends in Neurosciences*, 2003, **26**:243-247.
11. Wilson, D.A. and Stevenson, R.J. Olfactory perceptual learning: The critical role of memory in odor discrimination. *Neuroscience and Biobehavioral Reviews*, 2003, **27**:307-328.
12. Wilson, D.A., Fletcher, M.L. and Sullivan, R.M. Acetylcholine and olfactory perceptual learning. *Learning and Memory*, 2004, **11**:28-34.
13. Roth, T.L., Wilson, D.A. and Sullivan, R.M. Neurobehavioral development of infant learning and memory: Designed for attachment. In P.J.B. Slater, J.S. Rosenblatt, C.T. Snowden and T.J. Roper (Eds.) *Advances in the Study of Behavior*, volume 34, Academic Press, San Diego, 2004, 103-133.
14. Wilson, D.A., Best, A.R. and Sullivan, R.M. Plasticity in the olfactory system: Lessons for the neurobiology of memory, *The Neuroscientist*, 2004, **10**: 513-524.
15. Wilson, D.A. Odor perception is dynamic: Consequences for interpretation of odor maps, *Chemical Senses*, 2005, **30**: i105-i106.
16. Wilson, D.A., Kadohisa, M. and Fletcher, M.L. Olfactory cortex. *Seminars in Cell and Developmental Biology*, 2006, **17**:462-470.
17. Sullivan, R.M., Wilson, D.A., Feldon, J., Yee, B.K., Richter-Levin, G., Avi, A., Michael, T., Gruss, M., Bock, J., Helmeke, C., Westerholz, S. and Braun, K. Impact of early life experience on brain and behavioral development. *Developmental Psychobiology*, 2006, **48**: 583-602.
18. Stevenson, R.J. and Wilson, D.A. Odor perception: An object recognition approach. *Perception*, 2007, **36**:1821-1833.
19. Wilson, D.A. Olfactory cortex. In: Allan I. Basbaum, Akiichi Kaneko, Gordon M. Shepherd and Gerald Westheimer, editors *The Senses: A Comprehensive Reference*, Vol. 4, Olfaction and Taste, Stuart Firestein and Gary K. Beauchamp. San Diego: Academic Press, 2008, p 687-706.
20. Sullivan, R.M. and Wilson, D.A. Development of olfactory modulated approach and avoidance motivated behaviors. In Andrew Elliot (Ed.) *Handbook of Approach and Avoidance Motivation*. Mahwah, NJ, Lawrence Erlbaum Associates, 2008, p. 127-147.
21. Wilson, D.A. Olfactory cortex physiology. In Larry R. Squire, Editor-in-Chief, *Encyclopedia of Neuroscience*, Academic Press, Oxford, 2008, pp. 95-100.
22. Illig, K.R. and Wilson, D.A. Olfactory cortex: Comparative anatomy. In Larry R. Squire, Editor-in-Chief, *Encyclopedia of Neuroscience*, Academic Press, Oxford, 2008, pp. 101-106.
23. Wilson, D.A., Bell, H., Chen, C.F. Olfactory perceptual learning. *Encyclopedic Reference of Neuroscience*, Springer, (in press).
24. Wilson, D.A. Olfactory adaptation. *Encyclopedia of Perception*, Sage Publishing, (in press).
25. Wilson, D.A. and Linster, C.L. Neurobiology of a simple memory. *Journal of Neurophysiology*, 2008, **100**:2-7.
26. Rankin, C.H., Abrams, T., Barry, R., Bhatnagar, S., Cerutti, D., Clayton, D., Colombo, J., Coppola, G., Geyer, M., Glanzman, D., Marsland, S., McSweeney, F., Wilson, D., Wu, C.-F., and Thompson, R. Habituation revisited: An updated and revised description of the behavioral characteristics of habituation. *Neurobiology of Learning and Memory*, 2009, **92**:135-138.
27. Wilson, D.A. Olfaction as a model system for the neurobiology of mammalian short-term habituation. *Neurobiology of Learning and Memory*, 2009, **92**:199-205.
28. Wilson, D.A. and Rennaker, R.L. Cortical activity evoked by odors. In Anna Menini (Editor) *The Neurobiology of Olfaction*. Part of the *Frontiers in Neuroscience Series*, Series Editors: Sid Simon and Miguel Nicolelis. Taylor and Francis Group, CRC Press (in press).
29. Wilson, D.A. Pattern separation and completion in olfaction. In *Olfaction and Taste: International Symposium, Annals of the New York Academy of Sciences*, (in press).
30. Wilson, D.A. and Barkai, E. Olfactory cortex, In *Handbook of Brain Microcircuits*, Editors Gordon Shepherd and Sten Grillner, Oxford University Press (in press).

## INVITED COMMENTARIES

1. Sullivan, R.M. and Wilson, D.A. Perspective: Molecular biology of early olfactory learning. *Learning and Memory*, 2003, **10**:1-4.
2. Wilson, D.A. Fish smell: Editorial focus on "Odorant specificity of single olfactory bulb neurons to amino acids in the channel catfish", Nikonov, A.A. and Caprio, J. *Journal of Neurophysiology*, 2004, **92**:38-39.
3. Wilson, D.A. What's new in the olfactory cortex? *ChemoSense*, 2007, **9**:1-5.
4. Wilson, D.A. Ask the experts: How do we manage to remember smells despite the fact that each olfactory sensory neuron only survives for about 60 days and is then replaced by a new cell? *Scientific American* online, October 2007, [http://www.sciam.com/askexpert\\_question.cfm?chanID=sa005&articleID=C8600288-E7F2-99DF-34682C4F8E9B8D81&topic\\_id=3](http://www.sciam.com/askexpert_question.cfm?chanID=sa005&articleID=C8600288-E7F2-99DF-34682C4F8E9B8D81&topic_id=3)

5. McClintock, T.S., Wilson, D.A., Munger, S.D., Geran, L. Meeting Report: The 15<sup>th</sup> International Symposium on Olfaction and Taste (ISOT) on July 21 – 26, 2008 in San Francisco, CA. *Chemical Senses*, 2008, **33**: 735-738.
6. Wilson, D.A. and Nixon, R.A. Sniffing out a function for prion proteins. *Nature Neuroscience*, 2009, **12**: 7-8.

### **INVITED COLLOQUIA, SYMPOSIA AND WORKSHOPS (since 1994)**

- Neurobiology of memory in neonates, Oklahoma Center for Neurosciences 3rd Annual Meeting, Oklahoma City, October, 1994.
- Neurobiology of memory in infants, CNRS, Université Marie et Pierre Curie, Paris, FRANCE, June 1994
- Memory consolidation in neonates. European Brain and Behavior Society workshop *A new look at time dependent processes in memory formation*, Fourth International Behavioral Neuroscience Society Conference, Santiago de Compostela, SPAIN, May 18-21, 1995
- Functional consequences of olfactory deprivation, Laboratoire Physiologie Neurosensorielle, Université Claude Bernard, Lyon, FRANCE, May 4, 1995
- Functional consequences of olfactory deprivation, Department of Neuroscience, University of Virginia, April 16, 1996
- Information processing in the rat olfactory system, Department of Psychology, University of Arkansas, October 9, 1998
- Cortical mechanisms of simple memory in the olfactory system. 14th Annual Winter Conference on Current Issues in Developmental Psychobiology, St. Georges, GRENADA, January 7-10, 1999
- Cortical mechanisms of simple memory in the olfactory system. College of Physicians and Surgeons of Columbia University, Division of Developmental Psychobiology, New York, August 2, 1999
- Dynamic odor receptive fields in rat piriform cortex. Association for Chemoreception Sciences annual meeting symposium: *Cortical information processing in the olfactory system*, Sarasota, Florida, April 28, 2000
- Receptive fields in rat anterior piriform cortex. Department of Neuroscience and Physiology, SUNY Upstate Medical University, Syracuse, New York, December 8, 2000
- Receptive fields of olfactory cortical neurons. Department of Anatomy and Neurobiology, University of Maryland, Baltimore, Maryland, February 20, 2001
- Receptive fields of olfactory cortical neurons. Monell Chemical Senses Center, Philadelphia, Pennsylvania, May 29, 2001
- Receptive fields in olfactory cortex: Plasticity and synaptic mechanisms. Séminaires de Neurosciences, Université Pierre & Marie Curie, Paris, FRANCE, July 20, 2001.
- Receptive fields in olfactory cortex: Their role in perception and memory. Psychobiology 2001-2002 Workshop Series, Department of Psychobiology, Binghamton University, Binghamton, New York, September 21, 2001.
- Receptive fields of olfactory cortical neurons. Chemosensory Perception Laboratory, University of California at San Diego, November 30, 2001.
- Cortical receptive fields and perceptual learning in olfaction, Neuroscience Program, Florida State University, Tallahassee, Florida, March 6, 2002.
- The role of experience in development and maintenance of olfactory functional anatomy, Baker Research Seminar, Neuroscience Program, Florida State University, Tallahassee, Florida, March 7, 2002.
- Synthetic coding and perceptual learning in piriform cortex. Gordon Conference on Chemical Senses, New Hampshire, July 10, 2003
- Perceptual learning and memory as critical determinants of olfactory discrimination. International Brain Research Organization 6<sup>th</sup> World Congress, Prague, CZECH REPUBLIC, July 13, 2003
- Neurobiology of olfactory perceptual learning. Max-Planck-Institut für medizinische Forschung, Heidelberg, GERMANY, July 18, 2003
- Cortical mechanisms of simple olfactory memory. Center for Smell and Taste, McKnight Brain Institute, University of Florida, Gainesville, Florida, January 15, 2004.
- Neurobiology of olfactory perceptual learning. Committee on Computational Neuroscience, University of Chicago, Chicago, Illinois, February 3, 2004.
- Things just don't smell like they used to: Effects of learning on odor perception. Association for Chemoreception Sciences Workshop: Biophysical algorithms in chemosensation: Olfactory representation and learning. Sarasota, Florida, April 22, 2004.
- Cortical and limbic sensory processing during ontogeny. International Society for Developmental Psychobiology symposium: Impact of infant experiences on emotional and limbic system development. Aix-en-Provence, FRANCE, June 26, 2004.
- Odor perception is dynamic: Consequences for interpretation of odor maps. International Society for Olfaction and Taste symposium: Odor Maps, Kyoto, JAPAN, July 7, 2004
- Odor perception is dynamic: Consequences for interpretation of odor maps, National Institute of Advanced Industrial Science and Technology, July 12, 2004, Osaka, JAPAN.
- Olfactory information processing and its ontogeny, Department of Physiology, School of Medicine, University of Tokyo, July 21, 2004, Tokyo, JAPAN.
- Olfactory information processing and its ontogeny, Department of Physiology, Kochi Medical School, July 23, 2004, Kochi, JAPAN.

Olfactory sensory physiology during ontogeny of the rat. European Chemoreception Research Organization symposium: Developing chemosensation and behavioural development. Dijon, FRANCE, September 2004.

Cortical plasticity and olfactory perception. Program in Neuroscience, Boston University, Boston, Massachusetts, March 2, 2005.

Cortical plasticity and olfactory perception. Department of Physiology and Program in Neuroscience, University of Utah, Salt Lake City, Utah, March 10, 2005.

Cortical plasticity and olfactory perception. Department of Biological Sciences, Columbia University, New York City, New York, March 21, 2005.

Learning to smell: The role of cortical plasticity in olfaction. Department of Neuroscience and Cell Biology, University of Texas Medical Branch, Galveston, Texas, December 5, 2005.

Learning to smell: The role of cortical plasticity in olfaction. Association for Chemoreception Sciences Symposium: Approaching taste and olfaction at the systems level. Sarasota, FL April 29, 2006.

Learning to smell: The role of cortical plasticity in olfaction. Monell Chemical Senses Center, Philadelphia, PA, May 9, 2006.

Learning to smell: Cortical contributions to olfaction. Seventh Annual Simpson Neuroscience Symposium, University of Illinois at Chicago, Chicago, IL, June 2, 2006.

Perception of odor objects: Neurobiology and behavior. Aroma and Flavor symposium. American Society for Enology and Viticulture 57<sup>th</sup> annual meeting, Sacramento, CA June 27, 2006.

Cortical plasticity and odor perception. Symposium, From Molecules to behavior: The mammalian olfactory system in action. 5<sup>th</sup> Forum of European Neuroscience, Vienna Austria, July 11, 2006.

Grass Foundation Traveling Lecture: Learning to smell: Memory and odor perception. University of Chile, Santiago, CHILE, September 5, 2006.

Cortical plasticity: A key to sensory gating and perceptual learning. Department of Psychiatry, Emory University, Atlanta, Georgia, October 2, 2006.

Cortical mechanisms of sensory habituation through development. Symposium: Sensory gating: From genes to behavior. Current Issues in Developmental Psychobiology Winter Conference, Costa Rica, January 2007.

Learning to smell: Cortical contributions to odor perception. Department of Psychology, Cornell University, Ithaca, NY, February 2, 2007

Learning to smell: Memory and odor perception. Center for Neuroscience, West Virginia University, Morgantown, WV, February 7, 2007.

Cortical dynamics and sensory emotional perception: Learning to smell. Nathan Kline Institute, Orangeburg, New York, April 19, 2007.

Olfaction beyond the receptor. Origins and Evolution of Chemoreception catalysis meeting. National Evolutionary Synthesis Center, Durham, NC, June 4, 2007.

Cortical contributions to sensory habituation. Workshop: Habituation: The foundation of learning and attention. Peter Wall Institute for Advanced Studies, Vancouver, CANADA, August 17, 2007.

Cortical plasticity and odor perception. Workshop: Olfaction: Processing, Learning and Cognition, Les Treilles, Tourtour, FRANCE, August 31, 2007.

Rushton Lecture: Odors as objects: Cortical processing of complex stimuli. Florida State University, Tallahassee, FL, December 1, 2007

Cortical plasticity and odor perception. Department of Neurobiology, Yale University, New Haven, CT, December 6, 2007.

Pattern separation and completion in olfactory cortex: The balance between odor discrimination and perceptual stability. Presidential symposium, Joint meeting of the International Society for Olfaction and Taste *and* the Association for Chemoreception Sciences, San Francisco, CA, July 24, 2008.

Cortical plasticity and odor perception. Department of Zoology and Physiology, University of Wyoming, Cheyenne, WY, October 16, 2008.

Learning to smell: Cortical plasticity and odor perception, Department of Biology, University of Haifa, Haifa, ISRAEL, January 11, 2009.

Learning to smell: Cortical plasticity and odor perception, Department of Biology, Weizmann Institute, Rehovot, ISRAEL, January 14, 2009.

Olfaction as a model system for memory and perceptual disorders. Center for Dementia Research, Nathan Kline Institute for Psychiatric Research, February 17, 2009.

Olfactory cortical processing. Keystone Symposium on Chemical Senses: Receptors and Circuits. Tahoe City, California, March 18, 2009.

Cortical plasticity and odor perception. Department of Neurobiology and Anatomy, University of Texas at Houston Medical School, Houston, Texas, April 16, 2009.

The nose is just the beginning: Patterns, objects and experience in olfaction., Association for Chemoreception Sciences Symposium: Follow the head not only the nose: Top-down influences on olfactory perception. Sarasota, Florida. April 24, 2009.

Perception of odors. Sensory Coding in Drug Abuse Workshop, National Institutes on Drug Abuse. Rockville, Maryland, June 9, 2009.

## SELECTED ABSTRACTS

1. Oswalt, G.L. and Wilson, D.A. Adult-male odor suppresses ultrasonic vocalization in infant rats. Presented at the Eastern Conference on Reproductive Behavior, New Orleans, 1979.
2. Gall, C., Lynch, G.S., Morris, R.G.M. and Wilson, D.A. Septo-temporal distribution of medial and lateral perforant path innervation of rat hippocampus and capacity to support long-term potentiation. *Journal of Physiology* (London), 1985, **358**: 45P.
3. Wilson, D.A. and Leon, M. Localized changes in olfactory bulb output cell response patterns following postnatal olfactory learning. *International Society for Developmental Psychobiology Abstracts*, 1986, p. 70.
4. Wilson, D.A. and Leon, M. Evidence of lateral synaptic interactions in olfactory bulb output cell responses to odors. *Chemical Senses*, 1987, **12**: 709.
5. Wilson, D.A., Sullivan, R.M. and Leon, M. Norepinephrine influences early olfactory learning: Single-unit, metabolic and behavioral responses to learned odor cues. Third Conference on the Neurobiology of Learning and Memory, Irvine, California, 1987.
6. Wilson, D.A. and Leon, M. Spatial patterns of mitral/tufted cell responses to odors investigated with combined single-unit, HRP and <sup>14</sup>C-2-DG techniques in the rat. *Society for Neuroscience Abstracts*, 1988, **14**: 1188.
7. Sullivan, R.M. and Wilson, D.A. Plasticity in the reinforcement system of infant rats. *Society for Neuroscience Abstracts*, 1990, **16**, 917.
8. Wilson, D.A. and Sullivan, R.M. Norepinephrine antagonists modulate a specific component of the mitral/tufted cell response to reward. *Fourth Conference on the Neurobiology of Learning and Memory*, Irvine, California, 1990.
9. Sullivan, R.M. and Wilson, D.A. The role of the amygdala and periamygdala region in early olfactory associative learning. *Society for Neuroscience Abstracts*, 1991, **17**, 660.
10. Wilson, D.A. and Sullivan, R.M. Blockade of mitral/tufted cell habituation to odors by association with reward. *Society for Neuroscience Abstracts*, 1992, **18**, 1065.
11. Sullivan, R.M. and Wilson, D.A. The role of norepinephrine in consolidation of early olfactory memories. *Society for Neuroscience Abstracts*, 1992, **18**, 526.
12. Wilson, D.A., Guthrie, K.M., Smart, R., Gall, C.M. and Sullivan, R.M. NMDA receptor modulation of olfactory bulb inhibitory circuits. *Association for Chemoreception Sciences*, 1993, Sarasota, FL.
13. Hamrick, W.D., Wilson, D.A. and Sullivan, R.M. Learning induced changes in metabolic activity in the adult rat olfactory system. *Association for Chemoreception Sciences*, 1993, Sarasota, FL.
14. Sullivan, R.M., Wilson, D.A. and Toubas, P.L. Olfactory cues suppress newborn human infant crying. *Association for Chemoreception Sciences*, 1993, Sarasota, FL.
15. Wilson, D.A. Effects of long-term (>12 months) unilateral olfactory deprivation on olfactory bulb single-unit response patterns to odors. *Society for Neuroscience Abstracts*, 1993, **19**, 133.
16. Sullivan, R.M., Wilson, D.A., Lemon, C., Pham, C. and Gerhardt, G.A. Bilateral 6-OHDA lesions of the locus coeruleus impair associative olfactory learning in newborn rats. *Society for Neuroscience Abstracts*, 1993, **19**, 565.
17. Smart, R.S., Wilson, D.A. and Sullivan, R.M. Effect of olfactory bulb GABA on olfactory associative learning and bulb physiology in neonatal rats. *Society for Neuroscience Abstracts*, 1993, **19**, 565.
18. Wilson, D.A. and Sullivan, R.M. La spiperone, antagoniste D2 dopaminergic, reproduit les effets de la privation sensorielle sur les patterns de reponse des cellules mitrales/panaches aux odeurs. *Colloque de la Societe des Neurosciences de la France*, Lyon, FRANCE, May 14-18, 1995.
19. Wilson, D.A., Herve-Minvielle, A., Robinson, D. and Sara, S.J. Inhibition of locus coeruleus neurons by spontaneous and induced frontal cortex activity. *Society for Neurosciences Abstracts*, 1995, **21**, 1929.
20. Woo, C.C., Lemon, C., Wilson, D.A., Sullivan, R.M. and Leon, M. Locus coeruleus lesions increase density of beta-adrenergic receptors in the main olfactory bulb of young rats. *Society for Neurosciences Abstracts*, 1995, **21**, 1183.
21. Wilson, D.A. and Sullivan, R.M. Memory consolidation in neonates. Invited address at the European Brain and Behavior Society workshop: *A new look at time dependent processes in memory formation*, Fourth International Behavioral Neuroscience Society Conference, Santiago de Compostela, SPAIN, May 18-21, 1995.
22. Wilson, D.A. and Sullivan, R.M. Unilateral olfactory deprivation modifies bi-nasal interactions in piriform cortex. *Association for Chemoreception Sciences*, 1996, Sarasota, FL.
23. Ravel, N., Chabaud, P., Mouly, A.M., Wilson, D.A. and Gervais, R. Dynamics and coherence of oscillatory activity in central olfactory pathways in rats. *Society for Neurosciences Abstracts*, 1996, **22**, 1825.
24. Wilson, D.A. and Sullivan, R.M. Experience-dependent modification of bi-nasal interactions in piriform cortex. *Society for Neurosciences Abstracts*, 1996, **22**, 913.
25. Sullivan, R.M., Landers, M. and Wilson, D.A. Paradoxical infantile olfactory memories. *Society for Neurosciences Abstracts*, 1996, **22**, 1385.
26. Chabaud, P., Ravel, N., Mouly, A.M., Gervais, R. and Wilson, D.A. Dynamic changes induced by odors: A multisite recording study of local field potentials in freely-moving rats. *European Neuroscience*

- Association Annual meeting, FRANCE, September, 1996.
27. Wilson, D.A. Bi-nasal interactions in rat piriform cortex. *International Society for Olfaction and Taste XII/Association for Chemoreception Sciences*, 1997, San Diego, CA.
  28. Wilson, D.A. Habituation to odor stimuli by rat anterior piriform cortex single-units. *Society for Neurosciences Abstracts*, 1997, **23**, 2075.
  29. Landers, M.S., Sullivan, R.M. and Wilson, D.A. Functional integration of stimuli by the neonatal somatosensory system. *Society for Neurosciences Abstracts*, 1997, **23**, 2347.
  30. Chabaud, P., Ravel, N., Didier, A., Gervais, R. and Wilson, D.A. Differential effect of scopolamine on odor-induced synchronization between olfactory areas in rat. *Society for Neurosciences Abstracts*, 1997, **23**, 2076.
  31. Ravel, N., Chabaud, P., Mouly, A.M., Wilson, D.A. and Gervais, R. Learning-induced changes in synchronization between olfactory areas in rat. *Society for Neurosciences Abstracts*, 1997, **23**, 1616.
  32. Wilson, D.A. Synaptic correlates of odor habituation in the rat anterior piriform cortex. *Society for Neurosciences Abstracts*, 1998, **24**, 651.
  33. Wilson, D.A. Cortical mechanisms of olfactory coding: adaptation and cross-adaptation to odorants presented singly and in mixtures. *Association for Chemoreception Sciences*, 1999, Sarasota, FL.
  34. Wilson, D.A. Dynamic odor receptive fields in rat piriform cortex. *Association for Chemoreception Sciences*, 2000, Sarasota, FL.
  35. Wilson, D.A.. Receptive field plasticity in rat anterior piriform cortex. *Society for Neurosciences Abstracts*, 2000, New Orleans, LA.
  36. Wilson, D.A. The role of acetylcholine in odor discrimination and cross-habituation by anterior piriform cortex neurons. *Association for Chemoreception Sciences*, 2001, Sarasota, FL.
  37. Wilson, D.A. Synthetic coding of odorant mixtures in rat piriform cortex. *Association for Chemoreception Sciences*, 2002, Sarasota, FL.
  38. Best, A.R. and Wilson, D.A. Neural correlates of cortical odor habituation. *Association for Chemoreception Sciences*, 2002, Sarasota, FL.
  39. Fletcher, M.L. and Wilson, D.A. Mechanisms of olfactory perceptual learning. *Association for Chemoreception Sciences*, 2002, Sarasota, FL.
  40. Leung, C.H. and Wilson, D.A. Odor stimulation modulates apoptosis in adult olfactory (piriform) cortex of the rat. *Association for Chemoreception Sciences*, 2002, Sarasota, FL.
  41. Bouret, S., Kublik, E., Wilson, D.A. and Sara, S.J. Olfactory responses in medial frontal cortex neurons in odor-reward association. *Association for Chemoreception Sciences*, 2002, Sarasota, FL.
  42. Bouret, S., Wilson, D.A. and Sara, S.J. Neuronal responses to odours in olfactory cortex and medial frontal cortex in the anesthetized rat. *Third Forum of European Neuroscience*, 2002, Paris, France.
  43. Moriceau, S., Sullivan, R.M. and Wilson, D.A. Developmental locus coeruleus autoreceptors in a mammalian model of imprinting. *Third Forum of European Neuroscience*, 2002, Paris, France.
  44. Wilson, D.A. Experience-dependent synthetic coding of odorants in rat piriform cortex. *Society for Neurosciences Abstracts*, 2002, Orlando, FL.
  45. Fletcher, M.L. and Wilson, D.A. Experience-induced changes in mitral/tufted cell receptive fields. *Society for Neurosciences Abstracts*, 2002, Orlando, FL.
  46. Best, A.R. and Wilson, D.A. Synaptic correlates of cortical adaptation *Society for Neurosciences Abstracts*, 2002, Orlando, FL.
  47. Fletcher, M.L. and Wilson, D.A. Experience-induced olfactory bulb mitral/tufted cell receptive field plasticity. *Association for Chemoreception Sciences*, 2003, Sarasota, FL.
  48. Best, A.R. and Wilson, D.A. Coordinated synaptic mechanisms underlie cortical olfactory adaptation. *Association for Chemoreception Sciences*, 2003, Sarasota, FL.
  49. Wilson, D.A. Ontogeny of sensory-evoked single-unit responses in rat amygdala. *International society for developmental psychobiology abstracts*, 2003, New Orleans, La.
  50. Best, A.R., Thompson, J.V., Fletcher, M.L. and Wilson, D.A. Synaptic mechanism of habituation of a simple olfactory mediated behavior in the rat. *Society for Neurosciences Abstracts*, 2004, San Diego, CA.
  51. Fletcher, M.L., Smith, A.M., Myers, B.P. and Wilson, D.A. Olfactory bulb gamma frequency oscillations and odor discrimination: a developmental mismatch. *Society for Neurosciences Abstracts*, 2004, San Diego, CA.
  52. Kadohisa, M. and Wilson, D.A. Olfactory figure-ground discrimination in rat piriform cortex. *Society for Neurosciences Abstracts*, 2004, San Diego, CA.
  53. Ruyle, A.M., Fletcher, M.L., Wilson, D.A. and Rennaker, R. Ensemble single-unit activity recorded with chronic indwelling microelectrode arrays in rat piriform cortex. *Society for Neurosciences Abstracts*, 2004, San Diego, CA.
  54. Fletcher, M.L., Wilson, D.A. and Cleland, T.A. Ontogeny of odor discrimination: Intensity modulation of olfactory acuity emerges postnatally. *Association for Chemoreception Sciences*, 2005, Sarasota, FL.
  55. Kadohisa, M. and Wilson, D.A. A cortical high-pass filter contributes to olfactory figure-ground separation. *Association for Chemoreception Sciences*, 2005, Sarasota, FL.
  56. Wilson, D.A., Kadohisa, M. and Linster, C. Functional role of synaptic adaptation of afferent inputs to the olfactory cortex: combined electrophysiological, behavioral and computational approach. *Society for Neurosciences*

*Abstracts*, 2005, Washington, D.C.

57. Linster C. Kadohisa, M. and Wilson, D.A. Electrophysiological, behavioral and computational investigation of the functional role of synaptic adaptation in olfactory cortex. *Association for Chemoreception Sciences*, 2006, Sarasota, FL.
58. Kadohisa, M. and Wilson, D.A. Olfactory experience de-correlates encoding of mixtures from components in rat piriform cortex. *Association for Chemoreception Sciences*, 2006, Sarasota, FL.
59. Rennaker, R., Ruyle, A., Chen, C.F. and Wilson, D.A. Microelectrode array analysis of odorant-evoked spatial activity patterns in piriform cortex. *Association for Chemoreception Sciences*, 2006, Sarasota, FL.
60. Kadohisa, M. and Wilson, D.A. Effect of odor experience of rat piriform cortex plasticity. European Chemoreception Research Organization biannual meeting, 2006, Granada, Spain.
61. Kadohisa, M. and Wilson, D.A. Differential effects of odor experience on odor processing in rat anterior and posterior piriform cortex. *Society for Neurosciences Abstracts*, 2006, Atlanta, GA.
62. Bell, H.M. and Wilson, D.A. Sensory adaptation and neurobehavioral development in rats. *Society for Neurosciences Abstracts*, 2006, Atlanta, GA.
63. Wilson, D.A., Ruyle, A., and Rennaker, R.L. Analysis of odorant-evoked spatial and temporal patterns in piriform cortex. *Society for Neurosciences Abstracts*, 2006, Atlanta, GA.
64. Chen, C.F. and Wilson, D.A. Single electrode recording of odorant-evoked activity in rats' anterior piriform cortex: a cross-correlation analysis of cell pairs. *Society for Neurosciences Abstracts*, 2006, Atlanta, GA.
65. Magidson, P.D., McNamara, A.M., Cleland, T.A., Wilson, D.A. and Linster, C. Behavioral and pharmacological evidence for two different mechanisms of habituation learning in the olfactory system. *Association for Chemoreception Sciences*, 2007, Sarasota, FL.
66. Wilson, D.A. Pattern completion and separation in piriform cortex. *Association for Chemoreception Sciences*, 2007, Sarasota, FL.
67. Linster, C. and Wilson, D.A. Computational investigation of the interaction between synaptic adaptation and potentiation in olfactory cortex. *International Society for Olfaction and Taste/Association for Chemoreception Sciences*, 2008, San Francisco, CA.
68. Chen, C.-F.F. and Wilson, D.A. Cortical processing of learned aversive odors in awake rats. *Society for Neurosciences Abstracts*, 2008, Washington, D.C.
69. Barnes, D., Hofacer, R., Zaman, A., Rennaker, R.L. and Wilson, D.A. Pattern separation and completion in olfactory cortex. *Society for Neurosciences Abstracts*, 2008, Washington, D.C.
70. Chen, C.-F.F. and Wilson, D.A. Cortical processing of learned aversive odors in awake rats. *Association for Chemoreception Sciences*, 2009, Sarasota, FL.
71. Rennaker, R.L. and Wilson, D.A. Development and testing of a neural recording system for chemosensory behavioral neuroscience. *Association for Chemoreception Sciences*, 2009, Sarasota, FL.
72. Wesson, D.W., Levy, E., Nixon, R.A. and Wilson, D.A.. Olfactory perceptual correlates of  $\beta$ -amyloid plaque burden in Alzheimer's Disease mouse models. *Association for Chemoreception Sciences*, 2009, Sarasota, FL.

## Graduate Students/Post-doctoral associates

<u>Name</u>	<u>Degree</u>	<u>Next Position</u>
William Hamrick	MS, 1993	Drug addiction counselor
Rebecca Smart	MS, 1994	CUNY PhD program
Theresa Young	MS, 1999	NIH
Carol Ho-Wing Leung	MS, 2002	U Singapore PhD program
Aaron Best	MS, 2002/PhD, 2005	Harvard Med School postdoc
Max Fletcher	MS, 2002/PhD, 2005	Yale Med School postdoc
Mikiko Kadohisa	Postdoc, 2004- 2006	Scientist, MRC Cognition and Brain Sciences Unit, U.K.
Heather Bell	MS, 2007	Shedd Aquarium, Chicago
Chien-Fu Fred Chen	Ph.D. student, 2005- <i>present</i>	
Dylan Barnes	Ph.D. student 2008- <i>present</i>	
Daniel Wesson	Postdoc, 2008- <i>present</i>	