

Primary academic appointment: Department of Anatomy and Cell Biology
Institute for Neuroscience
The George Washington University School of Medicine
and Health Sciences

Present academic rank and title: Lieberman Professor of Neuroscience (with tenure)
Director, George Washington Institute for Neuroscience

Personal Information:

Date of birth: June 5, 1960

Place: Cleveland, OH

Citizen of: U.S.A.

<i>Education:</i>	<i>Institution:</i>	<i>Date:</i>	<i>Degree:</i>
College	University of Chicago	1982	B.A., Biology (with Honors)
Graduate School	Yale University	1988	Ph.D., Neuroscience
Postdoctoral	Washington University St. Louis, Missouri	1988- 1991	Non-degree

Professional Experience:

1980 – 1982	Undergraduate Research Assistant, Committee on Neurobiology, The University of Chicago, Chicago, Illinois (R.W. Guillery, mentor)
1982 – 1987	Predocorial Fellow, Section of Neuroanatomy, Yale University School of Medicine, New Haven, Connecticut (Pasko Rakic, mentor)
1983	Laboratory Instructor, Neurobiology, Department of Biology, Yale University, New Haven, Connecticut
1983	Student, Lecture Course in Molecular Biology of Behavior, Cold Spring Harbor, New York
1984	Student, Lecture Course in Developmental Neurobiology, Cold Spring Harbor Laboratory, Cold Spring Harbor, New York
1984 – 1986	Guest Lecturer, Neurobiology, Departments of Psychology and Biology, Yale University, New Haven, Connecticut
1986 – 1987	Instructor, Laboratory Course in Neuroanatomy, Yale University School of Medicine, New Haven, Connecticut
1988 – 1989	Postdoctoral Fellow, Department of Anatomy and Neurobiology, Washington University School of Medicine, St. Louis, Missouri (Dale Purves, mentor)

1989 – 1990 Research Associate, Department of Anatomy and Neurobiology, Washington University School of Medicine, St. Louis, Missouri

1990 Research Associate, Department of Neurobiology, Duke University Medical Center, Durham, North Carolina

1992 – 1996 Co-Director, Duke Comprehensive Cancer Center Transgenic Mouse Facility, Durham, North Carolina

1991 – 1998 Assistant Professor, Department of Neurobiology, Duke University Medical Center, Durham, North Carolina

1995 – 1998 Joint appointment in the Department of Zoology, Duke University

1998 – 2004 Associate Professor (tenured), Department of Cell and Molecular Physiology, School of Medicine, The University of North Carolina at Chapel Hill, Chapel Hill, North Carolina

1999– 2010 Member, UNC Neuroscience Center

2000– 2010 Associate Director, NC Center for Mental Health Research (Director, Dr. J. Lieberman, Dept. of Psychiatry, UNC-CH School of Medicine, 2000-2004; Director, Dr. J. Gilmore, 2005-2012)

2004-2010 Professor (tenured), Department of Cell & Molecular Physiology, School of Medicine, The University of North Carolina at Chapel Hill, Chapel Hill, North Carolina

2007-2008 Visiting Professor, Children’s Hospital, Boston, Division of Genetics, Laboratory of Dr. C.A Walsh, Dept. of Genetics, Harvard Medical School

2010-2020 Director, Institute for Neuroscience, George Washington University School of Medicine, Washington DC

2010-2017 Professor of Pharmacology and Physiology (tenured) George Washington University School of Medicine

2017-2020 Jeffery A. Lieberman Professor of Neuroscience, George Washington University School of Medicine

2017-2020 Director, GW Institute for Biomedical Science Ph.D. program in Neuroscience

2018 -2020 Professor of Anatomy and Cell Biology. George Washington University School of Medicine

- 2020 - Laboratory Head, Laboratory of Developmental Disorders and Genetics, Fralin Biomedical Research Institute, Virginia Tech-Carilion School of Medicine, Roanoke, VA
- 2020 - Fralin Biomedical Research Institute Professor of Genetics of Brain Development
- 2020 - Professor (with tenure), Department of Biological Sciences, Virginia Tech, Blacksburg, VA
- 2020 - Professor, Dept. of Pediatrics, Virginia Tech-Carilion School of Medicine

Honors/Awards/Recognition:

National Down Syndrome Society Science Scholar Award, 1991 – 1993

Alfred P. Sloan Foundation Fellow, 1992 – 1994

C.J. Herrick Young Investigator Award, American Association of Anatomists, 1994
Grass Foundation Traveling Lecture, Medical College of Georgia, January 2000

Wodecroft Investigator, National Alliance for Schizophrenia and Affective Disorders: 2000-2001

Nicholson Investigator, National Alliance for Schizophrenia and Affective Disorders: 2005-2006

Reynolds Faculty Research Fellowship, University of North Carolina at Chapel Hill, 2007-2008.

Finalist, NIH Pioneer Award Competition, May 2012 (1/23 finalists from 500+ applicants)

Distinguished Research Award, GW School of Medicine and Health Sciences, 2015

Publications:

Book:

1. Purves, D, Augustine, GJ, Fitzpatrick, D, Katz, LC, LaMantia, AS, McNamara, JO (1996: 1st Ed.) subsequent editions: 1999, 2nd Ed.; 2004, 3rd Ed., 2007, 4th Ed; 2011, 5th Ed) *Neuroscience*. Sinauer and Associates: Sunderland, MA. ASL: original author, primary author or co-author of 12 out of 31 chapters (Ch. 1, 15, 18, 19, 22, 23, 24, 25, 26, 27, 30) Editor, Unit 4- Neural Development, introductory and continuity material as well as supplementary material on invertebrate neural systems; ***6th edition published 2017***).

Chapters in books:

2. LaMantia, A.-S. (1990) The regulation of neuronal morphology and innervation in developing and adult animals: anatomical, physiological and in vivo observations. In: Systems Approaches to Neural Development. P. Raymond, G. Innocenti, and S. Easter, eds. New York: Plenum Press, pp. 99-111.
3. LaMantia, A.-S., M.C. Colbert and E. Linney (1995) Induction and the generation of regional and cellular diversity in the developing mammalian brain. In: Third Annual Altschul Symposium Proceedings. New York: Plenum Press, pp. 51-65.
4. LaMantia, A-S. (2000) Induction, Patterning and the Development of Forebrain Regions and Circuits. In Handbook on Brain and Behaviour in Human Development, A.F. Kalverboer & A. Gramsbergen, Eds. The Netherlands: Kluwer Academic. p 81-98.
5. LaMantia, A-S., (2003) Neural Development: Basic Mechanisms and Relevance for Psychiatric Disorders. Ch. 15, p.254-272 in: Psychiatry, 2nd ed., A. Tasman, J. Kay, J. Lieberman, editors. John Wiley & Sons.
6. LaMantia A-S. (2012) Section 1- Development, in Netter Collection of Medical Illustrations 2E, Nervous System Part I, Brain. edited by H. Royden Jones, MD; Ted M. Burns, MD; Michael Aminoff, MD; and Scott L. Pomeroy, MD, PhD. Saunders/Elsevier.
7. LaMantia, AS (2014) Building the Olfactory System: Morphogenesis and Stem Cell Specification in the Olfactory Epithelium and Olfactory Bulb. Principles of Developmental Genetics, 2nd Edition, ed. S.A. Moody: Ch. 20, p. 357-376. Elsevier Press.
8. Fernandez, A, Meechan, DW, Baker, JL, Karpinski, BA, LaMantia, AS, Maynard, TM (2014) 22q11 Deletion Syndrome: Copy Number Variations and Development. Principles of Dev. Genet. 2nd Edition, ed. S.A. Moody, Ch. 36, p.677-696. Elsevier.

Referred Journals:

9. Guillery, RW, LaMantia, AS, Robson, JA, Huang K (1985) The influence of retinal afferents upon the development of layers in the dorsal lateral geniculate nucleus of mustelids. J. Neurosci. 5: 1370-1379.
10. Guillery, RW, Ombrellaro M, LaMantia AS (1985) The organization of the lateral geniculate nucleus and of the geniculo-cortical pathway that develops without retinal afferents. Dev. Brain Res. 20: 221-223.
11. LaMantia, AS, Purves D (1989) Development of glomerular pattern observed in living mice. Nature 341: 646-649.
12. LaMantia, AS, Rakic P (1990) The cytological and quantitative characteristics of four cerebral commissures in the rhesus monkey. J. Comp. Neurol. 291: 520-537.

13. LaMantia, AS, Rakic P (1990) Axon overproduction and elimination during prenatal and postnatal development of corpus callosum in the rhesus monkey. *J. Neurosci.* 10: 2156-2175.
14. Pomeroy, SL, LaMantia AS, Purves D (1990) Postnatal construction of neural circuitry in the mouse olfactory bulb. *J. Neurosci.* 10: 1952-1966.
15. Purves, D, LaMantia AS (1990) Numbers of blobs in the primary visual cortex of juvenile and adult monkeys. *Proc. Natl. Acad. Sci. USA* 87: 5764-5767.
16. Purves, D, LaMantia AS (1990) Construction of modular circuits in the mammalian brain. *Cold Spring Harbor Quantitative Biology Symposium LV*: 445-452.
17. Zheng, D, LaMantia AS, Purves D (1991) Specialized vascularization of the primate visual cortex. *J. Neurosci.* 11: 2622-2629.
18. LaMantia, AS, Pomeroy, SL, Purves D (1992) Vital imaging of glomerular patterns in the olfactory bulbs of developing and adult mice. *J. Neurosci.* 12: 976-988.
19. Ouimet, C, LaMantia, AS Goldman-Rakic P, Greengard P (1992) Immunocytochemical localization of DARPP-32. A dopamine and cyclic AMP regulated phosphoprotein, in the primate brain. *J. Comp. Neurol.* 323: 209-218.
20. Purves, D, LaMantia, AS, Riddle DR (1992) Iterated patterns of brain circuitry (or how the cortex gets its spots). *Trends Nsci.* 15:362-368.
21. Colbert, M.C., E. Linney and A. -S. LaMantia (1993) Local sources of retinoic acid coincide with retinoid-mediated transgene activity during embryonic development. *Proc. Natl. Acad. Sci.* 90: 657-661.
22. LaMantia, A. -S., M. C. Colbert and E. Linney (1993) Retinoic acid induction and regional differentiation prefigure olfactory pathway formation in the mammalian forebrain. *Neuron* 10: 1035-1048.
23. Purves, D. and A.-S. LaMantia (1993) Development of blobs in the visual cortex of macaques. *J. Comp. Neurol.* 334: 169-175.
24. LaMantia, A.-S. and P. Rakic (1994) Axon overproduction and elimination in the developing rhesus monkey's anterior commissure. *J. Comp. Neurol.* 340: 238-336.
25. Purves, D., D. Riddle, L. White, G. Gutierrez and A.-S. LaMantia (1994) Categories of cortical structure. *Prog. Brain Res.* 102: 343-355.
26. LaMantia, A.-S. (1995) The usual suspects: GABA and glutamate may regulate proliferation in the neocortex. *Neuron* 15: 1-3.

27. Whitesides, J.G. and A.-S. LaMantia (1995) Differential adhesion of neurons and neural precursor cells from a distinct domain in the developing mammalian forebrain. *Dev. Biol.* 169: 229-241.
28. Colbert, M.C., W.W. Rubin, E. Linney and A.-S. LaMantia (1995) Retinoid signaling and the generation of regional and cellular diversity in the embryonic mouse spinal cord. *Dev. Dynamics* 204: 1-12.
29. Whitesides, J.G. and A.-S. LaMantia (1996) Differential adhesion and the initial assembly of the mammalian olfactory nerve. *J. Comp. Neurol.* 373: 240-254.
30. Anchan, R.M., D.P. Drake, E.A. Gerwe, C.F. Haines and A.-S. LaMantia (1997) A failure of retinoid-mediated induction accompanies the loss of the olfactory pathway during mammalian forebrain development. *J. Comp. Neurol.* 379: 171-184.
31. Whitesides, J.G., M.E. Hall, R.M. Anchan and A.-S. LaMantia (1998) Retinoid signaling distinguishes a subpopulation of olfactory receptor neurons in the developing and adult mouse. *J. Comp. Neurol.* 394: 445-461.
32. Morse, WR, Whitesides, JG, LaMantia, AS, Maness PF (1998) Nonreceptor tyrosine kinases pp60^{c-src} and p59^{fyn} modulate axon guidance in the developing olfactory pathway. *J. Neurobiol.* 36: 53-63.
33. LaMantia, AS (1999) Forebrain induction, retinoic acid, and vulnerability to schizophrenia: Insights from molecular and genetic analysis in developing mice. *Biol. Psych.* 46: 19-30.
34. Rubin, WW. and A.-S. LaMantia (1999) Regulation of DR5 RARE-mediated retinoid-responsiveness distinguishes cervical, thoracic, lumbar and sacral spinal cord during embryonic development. *Dev. Neurosci.* 21: 113-125.
35. Courtney, KD, M. Grove, H, Vandongen, A, Vandongen, M, LaMantia, AS, Pendergast AM (2000) Localization and Phosphorylation of Abl-interactor Proteins, Abi-1 and Abi-2, in the Developing Nervous System. *Mol. Cell. Neurosci.* 16:244-257.
36. LaMantia, A.-S., N. Bhasin., K. Rhodes, and J. Heemskerk (2000) Mesenchymal/epithelial induction mediates olfactory pathway formation. *Neuron* 28: 411-425.
37. Boukhelifa, M, Parast, M., Valtschanoff, JG, LaMantia, AS. Meeker, RB, Otey CA (2001) A Role for the Cytoskeleton-associated Protein Palladin in Neurite Outgrowth. *Mol. Biol. Cell* 12: 2721-2729.
38. Maynard, T, Jain, MD, Balmer, C, LaMantia AS (2002) High resolution mapping of the Gli3 mutation Extra Toes_J reveals a 51.5kb deletion. *Mam. Gen.* 13:58-61.

39. Maynard, T.M., Haskell, G.T., Bhasin, N., Lee, J., Gassman, A.A., Lieberman, J.A., and A-S. LaMantia (2002) RanBP1, a velocardiofacial/DiGeorge syndrome candidate gene, is expressed at sites of mesenchymal/epithelial induction. *Mech. Dev.*111:177-180.
40. Haskell, GT, Maynard, TM, Shatzmiller, R, LaMantia AS (2002) Retinoic acid signaling at sites of plasticity in the mature central nervous system. *J. Comp. Neurol.*452:228-241.
41. Bhasin, N., Maynard, T.M., Gallagher,P., and A.-S. LaMantia (2003) Mesenchymal/Epithelial Interactions Regulate Retinoid Signaling in the Olfactory Placode *Developmental Biology* 261:82-98.
42. Maynard, T.M. Haskell, G.T.,Peters, A.Z.,Lieberman, J.A., and A-S. LaMantia (2003) A comprehensive analysis of 22q11 gene expression in the developing and adult brain. *Proc. Natl. Acad. Sci* 100:14433-14438.
43. Balmer, C, LaMantia AS (2004) Independent regulation of olfactory axon trajectory by shh and Gli3 mediated mesenchymal/epithelial interactions. *J Comp. Neurol.* 472: 292-307.
44. Bhasin, N, LaMantia, AS, Lauder J (2004) Opposing Regulation of Cell Proliferation by Retinoic Acid and the Serotonin_{2B} Receptor in the Mouse Frontonasal Mass. *Anat. Embryol.* 208:135-143.
45. Haskell, G.M, and A-S. LaMantia (2005) Retinoid regulation of a distinct subset of slowly dividing precursors in the adult forebrain. *J. Neurosci.*25:7636-7647.
46. Councill, J.H, Haskell, G.M., Tucker, E.S., Maynard, T.M., Lieberman, J.A., and A-S LaMantia. (2006) Limited influence of the atypical anti-psychotic agent Olanzapine on adult neuroglial stem cells *in vitro*. *Neuroscience*, 140:111-122.
47. Maynard T.M., Meechan, D.W., Heindel, C.C., Peters, A. Z., Hamer, R.M., Lieberman, J.A., and A.-S. LaMantia (2006) No evidence for parental imprinting of mouse 22q11 gene orthologues *Mammalian Genome*:17:822-832.
48. Tucker, ES, Polleux, F, LaMantia AS (2006) Position and time specify the migration of a pioneering population of olfactory bulb interneurons. *Dev. Biol.* 297: 387-401.
49. Meechan, D, Maynard, TM, Peters, AZ, LaMantia AS (2007) Gene dosage in the developing and adult brain of a mouse model of 22q11 Deletion Syndrome. *Molecular and Cellular Neuroscience*: 33:412-428.
50. Tucker, ES, Segall, S, Ghopalikrishna, D, Wu, Y, Vernon, M, Polleux, F, LaMantia AS (2008) Molecular Specification and Patterning of Progenitor Cells in the Lateral and Medial Ganglionic Eminence. *J. Neurosci* 28:9504-9518.

51. Maynard, T.M., Meechan, D.M., Dudevoir, M.L., Peters, A.Z., Sugimoto, T.J., Wu, Y., Lieberman, J.A., and A-S. LaMantia (2008) A subset of 22q11 schizophrenia vulnerability genes are associated with synaptic mitochondria. *Mol. Cell. Neurosci.* 39: 435-451.
52. Cox ET, Brennaman LH, Gable KL, Hamer RM, Glantz LA, LaMantia A., Lieberman JA, Gilmore JH, Maness PF, Jarskog LF (2009) Developmental regulation of neural cell adhesion molecule in human prefrontal cortex. *Neurosci.* 162: 96-105.
53. Meechan DW, Tucker ES, Maynard TM, LaMantia AS (2009) Diminished dosage of 22q11 genes disrupts neurogenesis and cortical development in a mouse model of 22q11 deletion/DiGeorge syndrome. *Proc. Natl. Acad. Sci. USA* 106 (38):16434-45.
54. Manzini MC*, Rajab A*, Mochida G, Tan W-H, Nasir R, Hill RS, Maynard T, Gleason D, Al Saffar M, Partlow JN, LaMantia AS, Walsh CA (2010) Developmental and degenerative features in a complicated spastic paraplegia: A novel *SPG20* mutation in an Omani kindred. *Ann. Neurol.* 67: 516-525. (*co-1st authors).
55. Kim, S, Lehtinen MK, Sessa A, Zappaterra, MD, Cho, SH, Gonzalez, D, Boggan, B, Austin, C, Wijnholds, J, Gambello, MJ, Malicki, J, LaMantia AS, Broccoli, V, Walsh CA (2010) The apical complex couples cell fate and cell survival to cerebral cortical development. *Neuron* 66: 69-84.
56. Rawson, NE, Lischka, F, Yee, KK, Peters, AZ, Tucker, ES, Meechan, DW, Zirlinger, M, Maynard, TM, Burd, G., Dulac, C, Pevny, LH, LaMantia, AS (2010) Specific mesenchymal/epithelial induction of olfactory receptor, vomeronasal, and gonadotropin-releasing hormone (GnRH) neurons. *Dev. Dyn.* 239:1723-1738.
57. Tucker ES, Lehtinen, MK, Maynard, TM, Zirlinger, M, Dulac, C, Rawson, NE, Pevny, LH, LaMantia AS (2010) Proliferative and transcriptional identity of two distinct classes of neural precursors in the mammalian olfactory epithelium. *Development.* 37:2471-81. (PMID: 20573694). (selected as feature article "in this issue")
58. Lehtinen, MK, Zappaterra, MD, Chen, X, Yang, YJ, Hill, A, Lun, M, Maynard, TM, Gonzalez, D, Kim, S, Ping, Y, D'Ercole, JD, Wong, ET. LaMantia, AS, and Walsh, CA (2011) The cerebrospinal fluid provides a proliferative niche for neural progenitor cells. *Neuron* 69:893-605.
59. Meechan, DW, Tucker ES, Maynard, TM, LaMantia, AS (2012) *Cxcr4* regulation of interneuron migration is disrupted in 22q11.2 Deletion Syndrome. *Proc. Natl. Acad. Sci.* 109:18601-18606.
60. Maynard, TM*, Gopalikrishna, D*, Newbern, J, Parronet, E, Meechan, DW, LaMantia AS (2013) 22q11 gene dosage establishes a dynamic range for sonic hedgehog and retinoid signaling during early cardiovascular and brain development. *Hum. Mol. Genetics.* 22: 300-312. Epub: 2012, (*co-first authors)

61. Zappaterra, MW, LaMantia, AS, Walsh, CA, Lehtinen, MK (2012) Isolation of cerebrospinal fluid from rodent embryos for use with dissected cerebral cortical explants. *J. Visualized Experiments JoVE*: 73, e50333.
62. Meechan DW, Rutz HLH, Fralish M, Maynard TM, Rothblat LA, LaMantia, AS (2013) Cognitive ability is associated with altered medial frontal cortical circuits in the *LgDel* mouse model of 22q11.2DS. *Cerebral Cortex* (Epub: Nov.11, 2013)
63. Karpinski, BK, Maynard, TM, Fralish MW, Nuwayhid, S, Zohn, I, Moody, SA, LaMantia AS (2013) Dysphagia and disrupted cranial nerve development in a mouse model of DiGeorge/22q11 Deletion Syndrome. *Disease Models and Mechanisms* (cover/featured article)
64. Sarkar AA, Nuwayhid SJ, Maynard T, Ghandchi F, Hill JT, LaMantia AS and Zohn IE. (2014) *Hectd1* is Required for Development of the Junctional Zone of the Placenta. *Dev. Biol.* 392:368-380.
65. Paronett, E, Fralish, M, Meechan, DW, LaMantia, AS, Maynard, TM (2015) *Ranbp1*, deleted in 22q11 Deletion Syndrome, is a microcephaly-related gene in the mouse. *Cerebral Cortex* 25(10): 3977-93.
66. Chau KF, Springel MW, Broadbelt KG, Park HY, Topal S, Lun MP, Mullan H, Maynard T, Steen H, LaMantia AS, Lehtinen MK. (2015) Progressive Differentiation and Instructive Capacities of Amniotic Fluid and Cerebrospinal Fluid Proteomes following Neural Tube Closure. *Dev. Cell* 35:789-802.
67. Karpinski BA, Bryan CA, Paronett EM, Baker JL, Fernandez A, Horvath A, Maynard TM, Moody SA, LaMantia AS. (2016) A cellular and molecular mosaic establishes growth and differentiation states for cranial sensory neurons. *Dev Biol.* 415(2):228-241.
68. Baker JL, Wood B, Karpinski BA, LaMantia AS, Maynard TM. (2016) Testicular receptor 2, *Nr2c1*, is associated with stem cells in the developing olfactory epithelium and other cranial sensory and skeletal structures. *Gene Expr. Patterns.*:71-79.
69. Sherman JH, Karpinski, BA, Fralish, M, Capuzzo J, Dhindsa, D, Thal, A, Moody, SA, LaMantia, AS, Maynard, TM. (2016) *Foxd4* is essential for establishing neural cell fate for neuronal differentiation. *Genesis* 55: 13 pages, online only; Epub 04/17.
70. Steullet, P, Caungcal, J-H, Coyle, J, Didriksen, M, Gill, K, Grace, AA, Hensch, TK, LaMantia, AS, Lindemann, L, Maynard, TM, Meyer, U, Morishita, H, O'Donnell P, Puhl, M, Cuenod, M, and Do, KQ (2017) Oxidative stress-driven parvalbumin interneuron impairment as a common mechanism in models of schizophrenia. *Mol. Psychiatry*, epub ahead of print, doi10.1038/mp.2017.47

71. Wang, X, Bryan C, LaMantia, AS, Mendelowitz, D (2017) Altered neurobiological function of brainstem hypoglossal neurons in DiGeorge/22q11.2 Deletion Syndrome. *Neuroscience* 359:1-7 (e-pub)
72. Fernandez, A*, Meechan, DW*, Karpinski, BA, Paronett, EM, Bryan, CA, Maynard, TM, LaMantia, AS. (2019). Mitochondrial dysfunction leads to cortical under-connectivity and cognitive impairment. *Neuron* 102: 1127-1152. (*co-first authors)
73. Maynard TM*, Horvath A*, Bernout J, Karpinski BA, Tavares ALP, Shah A, Zheng Q, Spurr L, Olender J, Moody SA Fraser, CM, LaMantia A-S, Lee NH (2019) Transcriptional dysregulation in developing trigeminal sensory neurons in the *LgDel* mouse model of DiGeorge 22q11.2 Deletion Syndrome. *Hum. Mol. Gen. in revision* (*co-first authors)
74. Wang X, Motahari Z, LaMantia A-S, Mendelowitz D (2019) Protruder and Retractor Hypoglossal Motor Neuron Dysfunction in DiGeorge/22q11.2 Deletion Syndrome. *eNeuro. submitted*
75. Motahari Z, Popratiloff A, Paronett EM, Maynard, TM, Moody SA, LaMantia A-S (2019) Disrupted Anterior-Posterior Patterning and Divergent Cranial Axon Specification in a Mouse Model of Pediatric Dysphagia. *Proc. Nat. Acad. Sci., submitted*

Reviews (peer reviewed):

76. Linney, E. and A.-S. LaMantia (1994) Retinoid signaling in mouse embryos. *Advances Dev. Biol.* 3: 73-114.
77. Maynard, TM, Sikich, LM, Lieberman, JA, and A-S.LaMantia (2001) Neural development, cell-cell signaling, and the two-hit hypothesis of schizophrenia. *Schiz. Bull.* 27:457-476.
78. Maynard, T.M., Haskell, G.T., Lieberman, J.A., LaMantia AS (2002) 22q11 Deletion Syndrome: insight into the developmental genetics of schizophrenia? *Int. J. Dev. Neurosci.* 20:407-419.
79. Miyamoto, S, LaMantia, AS, Duncan, GE, Sullivan, P, Gilmore, JH, Lieberman, JA (2004) Recent advances in the neurobiology of schizophrenia. *Mol. Interv.* 3: 27-39.
80. Balmer, CW, LaMantia, AS (2005) Noses and neurons: morphogenesis and neural induction in the olfactory pathway. *Dev. Dynamics* 234:464-481.
81. Rawson, NE, LaMantia, AS (2006) Once and again: Retinoic acid signaling in the developing and adult olfactory pathway. *J. Neurobiol.* 66:653-676. Special edition on Retinoid Signaling in the CNS (cover illustration).
82. Rawson NE, LaMantia, AS (2007): A Speculative essay on retinoic Acid Regulation of Neural Stem Cells in the Developing and Aging Brain. *Exp. Gerontol.*42: 46-53.

83. Meechan, DW, Maynard, TM, Ghopalikrishna, D, Wu, Y, and LaMantia, AS (2007) When half is not enough: Gene expression and dosage in the 22q11 Deletion Syndrome. *Gene Expression* 13: 299-310.
84. Meechan, D.W., Maynard, T.M., Tucker, E.S. and LaMantia AS (2011) Three Phases of DiGeorge/22q11 Deletion Syndrome Pathogenesis during brain development: patterning, proliferation, and mitochondrial functions of 22q11 genes. *Int. J. Dev. Nsci.* 29:283-294.
85. Moody, SA, Klein SL, Oakley BK., Maynard, TM, LaMantia AS (2013) On becoming neural: what the embryo can tell us about differentiating neural stem cells. *American Journal of Stem Cells* 2:74-94.
86. Moody, SA, LaMantia AS (2015) Transcriptional regulation of cranial sensory placode development. *Current Topics in Dev. Biol.* 111: 301-350.
87. Meechan, D.W., Maynard, T. M., Fernandez, A., Karpinski-Oakley, B.K., and A-S. LaMantia (2015). Modeling a Model: Mouse genetics, 22q11.2 Deletion Syndrome, and disorders of cortical development. *Prog. Neurobiol.* 130:1-28.
88. LaMantia AS, Moody SA, Maynard TM, Karpinski BA, Zohn IE, Mendelowitz D, Lee NH, Popratiloff A. (2016) Hard to swallow: Developmental biological insights into pediatric dysphagia. *Dev Biol.* 409(2):329-3742.
89. LaMantia, AS (2019) The strengths of the genetic approach to understanding the development and function of neural systems: Ray Guillery's Synthesis. *European J. Neurosci.* 49: 888-899.
90. Motahari Z, Moody SA, Maynard, TM, LaMantia, AS (2019) In the line-up: Fifty-six 22q11.2 Deleted Genes, Are They All Suspects? *J. Neurodev. Disorders* 11: 7 (epub only)
91. Maynard, TM, Zohn, IE, Moody SA, LaMantia AS (2019) Suckling, Feeding and Swallowing: Behaviors, circuits, and targets for neurodevelopmental pathology. *Annual Rev. Neuroscience* (*in press*)

Non-Refereed

92. LaMantia, AS (1988) The Organization and Development of the Cerebral Commissures in the Rhesus Monkey. Ph.D. Dissertation, Yale University.
93. Sherman SM, Mason CA, Atabay KD, Kaas JH, LaMantia AS, Mitchell A, Walsh C. (2017) Rainer (Ray) W. Guillery 28 August 1929-7 April 2017. *Eur J Neurosci.* 46:1933-1936.

Workshop Proceeding

94. Adams, J., Barone, S.J., LaMantia, A-S., Philen, R., Rice, D.C., Spear, L, and E. Susser (2000) Workshop to identify critical windows of exposure for children's health. Neurobehavioral Work Group Summary. Environmental Health Perspectives 108, Supplement 3: 535-544.

Book reviews:

95. Neocortical Development by Shirley A. Bayer and Joseph Altman. Trends in Neurosci. 15: 233-234 (1992).
96. The Parallel Brain: edited by Erin Zaidel and Marco Iacoboni. Nature Neuroscience 6:1115 (2004).

Teaching Record:

Co-Director, Medical School Neurobiology Course – Basic Neurobiology, 1991 – 1995, Duke

Co-Instructor, Graduate Core Course – Principles of Neural Development, 1991 – 1992, Duke

Co-Instructor, Graduate Core Course – Molecular Neurobiology, 1993 – 1995, Duke

Co-Instructor, Graduate Core Course – Prin. of Neural Development, 1996 - 1998, Duke

Co-Instructor, Graduate Core Course – Special Topics in Neurobiology, 1994 – 1998, Duke

Instructor, NBI 154/BioSci154/Psych 135 – Principles of Neurobiology, 1996 – 1998, Duke

Lecturer & Lab Instructor, Medical Neurobiology, UNC, 1998 – present

Lecturer, Developmental Biology, CBio 101, UNC, 1999-2002

Lecturer, Introductory Physiology, Phys 140, UNC, 1999-2002

Lecturer, Cell & Molecular Neurobiology, Nbio 223, UNC 2000-present

Lecturer, Physiology of Disease, Phys 240, UNC, 2000-2001

Director, Developmental Neurobiology, Phys 122, UNC, 2004-2007

Co-Director, Block 3, Integrative function and its cellular basis (Neurobiology Component), UNC-SOM, 2006

Lecturer, Physiology 702, Experimental Physiology of Human Health and Disease, (Neurobiology Block), Fall 2009 UNC

Lecturer, Biology 624 Developmental Biology (Graduate Course), Fall 2009 UNC

Lecturer, Physiology for Health Sciences, (School of Medicine and Health Sciences), GW, Fall 2010-

Lecturer, Medical Neuroscience, GW School of Medicine and Health Sciences, Fall 2010-

Course Director, Neural Development and Developmental Disorders, GW Interdisciplinary Biomedical Sciences (IBS) Graduate Program, Spring 2011-

Lecturer, Graduate course in Physiology, Fall 2012-, IBS, GW

Fellows & Students supervised:

Postdoctoral Mentor:

Melissa C. Colbert, Ph.D.	1991 – 1994	Associate Professor, Program for Excellence In Cardiology, Children’s Hospital Research Foundation, Cincinnati, OH (NRSA)
Raymond Anchan, M.D. Ph.D.	1994 – 1997	Assistant Professor, Division of Reproductive Endocrinology and Infertility, Dept. of Ob. & Gyn., Brigham & Women’s Hospital, Harvard Medical School (NRSA)
Marybeth Thomas, Ph.D.	1996 – 1998	Staff Scientist, Tranzyme Inc., Research Triangle Park, NC. (NRSA)
Thomas Maynard, Ph.D.	1999 - 2004	Research Associate Professor, Dept. Pharm. Phys. GWUMC (NARSAD Young Investigator Award)
Eric Tucker, Ph.D.	2002- 2010	Assistant Professor, West Virginia University School of Medicine Dept. of Anatomy and Neurobiology
Daniel Meechan, Ph.D.	2003-2009	Senior Research Scientist, GWUMC (NARSAD Young Investigator Award)
Nita Pillai-Nair, Ph.D.	2005-2006	Relocated to California with spouse No longer scientifically active
Michelle Weech, Ph.D.	2006-2009	Instructor, Northern Virginia Community College
Jonathan Sherman M.D.	2011-present	Assistant Professor of Neurosurgery, GW MFA. Dept. of Neurosurgery, GW School of Medicine
Zahra Motahari, Ph.D.	2016-present	(jointly with S. Moody) early motor neuron precursor anomalies and disrupted cranial axon growth
Gabor Banyai	2016-2017	(jointly with I.Zohn, T.Maynard) hindbrain RA signaling underlying feeding and swallowing deficits in the 22q11DS mouse model.

Ankita Shah	2017-2019	(jointly with S. Moody) disrupted cranial neural crest and neural precursor specification
Pre-doctoral Mentor:		
John G. Whitesides, III	1991 – 1996	Degree granted 1996 (Duke) Research Group Leader UCB Pharmaceuticals, Raleigh NC Thesis: Adhesive interactions during early forebrain development
Will R. Rubin	1993 – 1999	Degree granted 1999 (Duke) Senior Research Associate, UC Davis Thesis: Mechanism and consequences of retinoid induction in the developing spinal cord.
Naina Bhasin	1998 – 2002	Degree granted 2003 (UNC-CH; co-advisor with Dr. J. Lauder) Scientific Director, Hamner Res. Foun., Research Triangle Park, NC Thesis: Retinoid and Serotonergic regulation of inductive interactions
Gloria Haskell	2000 – 2004	Degree granted 2004 (University of North Carolina at Chapel Hill) Group Leader, LabCorp, Research Triangle Thesis: Retinoic Acid regulation of neural precursors in the developing and adult forebrain
Curtis Balmer	2000 – 2004	Degree granted 2004 (UNC-CH) Free Lance Science Writer associated With George Mason University Thesis: Genetic and inductive regulation of olfactory axon growth and guidance
Deepak Ghopalikrishna	2006 – 2011	Degree granted 2012 (UNC-CH, Am. Heart Pre-doc. fellowship) Thesis: Reciprocal regulation of 22q11 genes by cardinal inductive signals.
Alejandra Fernandez	2012-2017	Degree granted 2017 GW Institute for Biomedical Sciences Thesis: Role of 22q11 mitochondrial genes in cortical circuit development (NRSA awarded)
Undergraduate/Medical Student Mentor:		
Thomas Coburn (Duke)	1990 – 1991	M.D. 1995 Univ. of Kentucky Med. Sch.
Scott Fargher (Duke)	1992 – 1993	M.D. 1997

		Univ. of S. Fla. Med. Sch.
Daniel Drake (Duke)	1993 – 1995	M.D. 1998 Washington Univ. Med. School
Miles Hall (Duke)	1995-1997	DVM NC State, 2001; LLD, Vanderbilt, 2005
Matthew Smear (Duke)	1996 – 1998	Ph.D. Univ. of California, San Francisco
Eric Hawkins (UNC)	1999-2000	M.D. UNC Sch. of Med.
Michael Jain (UNC)	Summer 2001	Univ. of Alberta, M.D./Ph.D. McGill University
Carl Fisher (UNC)	2001-2003	UNC, Class of 2003, (Luce Scholar-2003) MD, Columbia Univ Coll. Phys. & Surg.
Katherine Brewer (UNC)	2002-2003	UNC, Class of 2003
Lindsey LaRose (UNC)	Summer 2003	Wellesley, Class of 2004
Michelle Dudevoir (UNC)	Summer 2006	Allegheny College, class of 2007
Andrea Lewis (UNC)	Summer 2009	University of LA, West Lafayette, Class of 2010
Mariam Salisu (GW)	Summer 2012	M.D. GW Sch. of Med. 2015
Davinder Dhindsa (GW)	Summer 2012	M.D. GW Sch. of Med. 2015
Justin Cappuzzo (GW)	Summer 2013	M.D. GW Sch. of Med. 2016
Ariel Thal (GW)	Summer 2013	M.D. GW Sch. of Med. 2016
Erin McCormack (GW)	Summer 2014	M.D. student, graduation, 2017
Erin Good (GW)	Summer 2015	M.D. student, graduation 2018
David Daniel (GW)	Summer 2016	M.D. student, graduation 2019
Noah Lubin(GW)	Summer 2017	M.D. Student, graduation 2020
	Summer 2017-	Undergrad.Class of 2020, Neuroscience

Grants (Pending, Current, Past)

Current Funding

1P01HD083157 Pathology, Developmental Origins, and Prevention of Pediatric Dysphagia
A-S. LaMantia, Program Director/Principle Investigator/P.I. Project 2
04/01/2015-003/31/2020 (pending, 4th percentile score)
Total Annual Direct Costs: \$1,000,000
Total Award: \$6,200,000

1R01 HD042182 Regulation of 22q11 Genes in embryonic and adult forebrain.
A-S.LaMantia, P.I. (30% effort)
04/01/16-03/31/21
Total annual direct costs: \$325,000
Total award: \$2,250,000

Past Funding

SFARI 306796 Disruption of Cortical Projection Neurons, Circuits, and Cognition in ASD
A-S. LaMantia, Principle Investigator (10% effort)
07/01/14-06/30/18
Total annual direct costs: \$250,000
Total Award: \$900,000

1R01 DC011534 Specification of Peripheral Olfactory Stem Cells
A-S. LaMantia, Principal Investigator (30% effort)
09/01/11-08/31/16 (in one year no-cost extension)
Total annual direct costs: \$250,000
Total award (anticipated) \$1,560,000

NIMH NRSA F31MH103021 to Alejandra Fernandez (GW IBS Graduate Student)
07/01/14-06/30/17
Annual Direct costs: \$32,040
Total Award: \$96,120

5P50 MH33127 Conte Center for the Neuroscience of Mental Disorders at the University of
North Carolina School of Medicine: P.I. Project 4: 22q11 Genes and
development of Cortical Interneurons. 08/07-07/12 (20% effort)
Total annual direct costs: \$150,000

National Alliance for Research in Schizophrenia and Affective Diseases (NARSAD):
Young Investigator Award to Daniel Meehan (Research Instructor in A-S.L.
laboratory). 06/09-05/11
Total Award: \$60,000

2R01 HD29178 Regional Differentiation during Forebrain Development
A-S. LaMantia, Principal Investigator (30% effort)
12/01/04-11/31/09

Average annual direct costs: \$300,000
Total award: \$1,800,000

1RO1 HD042182 Regulation of 22q11 Genes in embryonic and adult forebrain.
A-S.LaMantia, P.I. (30% effort)
04/01/03-03/31/08
Total annual direct costs: \$202,500
Total award: \$1,467,865

NINDS Center Grant W.D. Snider, P.I.,
07/01/08-06/30/13 (5% effort)
Director, Core 2: Expression analysis and localization core (5% effort)
Total annual direct costs: \$80,000
Total award: \$500,000/year (UNC)

NINDS Center Grant W.D. Snider, P.I.,
07/01-03-06/30/08
Co-director, Core 2: In Situ localization core (5% effort)
Total annual direct costs: \$64,583
Total award: \$474,317/year (UNC)

National Alliance for Research in Schizophrenia and Affective Diseases (NARSAD):
Young Investigator Award to Tom Maynard (Res. Inst. in A-S.L. laboratory).
06/05-05/07
Total Award: \$60,000

American Heart Association Predoctoral Fellowship awarded to Deepak Ghopalikrishna, (Ph.D.
student in A-S.L. laboratory)
06/08-06/10
Total Award: \$40,000

NIDCD NRSA Eric Tucker (Post-doctoral Fellow)
04/01/04-03/31/07
Total Award: \$150,000 (approx.)

5P50 MH33127 Conte Center for the Neuroscience of Mental Disorders at the UNC Sch. of
Med.: co-P.I. (with P. Maness) Proj. 4
Total award (ASL): \$751,540
Total award (UNC): \$7,000,000

5P50 MH33127 Conte Center for the Neuroscience of Mental Disorders at the University of
North Carolina School of Medicine:Administrative Core: Associate Director (J.
Lieberman, Director-ASL:5% effort).
Total annual direct costs: \$97, 805
Total award: \$713,975

1RO1 HD29178 Regional Differentiation during Forebrain Development
A-S. LaMantia, Principal Investigator
4/01/99-03/31/04

Average annual total costs: \$234,000
Total award: \$1,117,972

National Alliance for Research in Schizophrenia and Affective Diseases (NARSAD):
Schizophrenia Vulnerability genes and interneuron migration
A-S. LaMantia, Principal Investigator
09/15/04-09/14/06
Total Award: \$100,000

Minority Supp. to Regional Differentiation (Gloria Haskell; graduate student): 1R01-HD29178
Average annual direct costs: \$20,000
Total award (9/01-04/04):\$83,899

Eli Lilly & Co. The effects of Olanzapine on genesis, differentiation and maintenance of
progenitor cells in the cerebral cortex.
Total Award: \$133,455

1R29 HD29178 Regional Differentiation during Forebrain Development.
A-S. LaMantia, Principal Investigator
04/01/93-03/31/98
Total Award: \$500,000

1R55 NS38843 Retinoid Signalling and Plasticity in the Spinal Cord
A-S. LaMantia, Principal Investigator
09/25/98-08/31/00
Total Award: \$100,000

National Alliance for Research in Schizophrenia and Affective Diseases (NARSAD):
Identification of genes that influence forebrain development from a
schizophrenia vulnerability region of human chromosome 22
A-S. LaMantia, Principal Investigator
09/15/99-09/14/01
Total Award:\$100,000

March of Dimes Basic Research Grant: Retinoid Signaling During Forebrain Development
A-S. LaMantia, Principal Investigator
08/01/95-07/31/97
Total Award: \$110,000

76296-550601 Howard Hughes Pilot Project Grant: Forebrain Induction and Schizophrenia
A-S. LaMantia, Principal Investigator
11/01-98-10/31/99
Total Award: \$45,000

1R01 NS38961 Scaffolding Complexes that Modulate Dopamine Signalling
S. Milgram, Principal Investigator
A-S. LaMantia, Co-P.I
07/01/99-06/30/02
Total Award: \$650,034

Sloan Foundation Fellow Award: 1993-1994
Total Award: \$30,000

National Down Syndrome Society Award: 1991-1993
Total Award: \$50,000

Individual NRSA awards to Raymond Anchan & Marybeth Thomas
Total Award: \$ 100,000/for each post-doc (approximate)

Duke Comprehensive Cancer Center Grant (NIH-NCI) Transgenic Mouse Facility Core Grant
E. Linney, Director, A-S.LaMantia, Assistant Director
5% salary support 1993-1998

Professional Service:

To Discipline (selected):

Reviewing Editor, Genetics/Molecular/Development section, Cerebral Cortex, 2006-2017

Member, Editorial Board, Gene Expression, 2006-

Member, Editorial Board, Developmental Neuroscience, 2004-

Member, Editorial Board, Synapse, 1999-

Regular Member, NCF Study Section, 06/06-03/10

Ad Hoc member, Neural Cell Fate Study Section (NCF), NIH/CSR, 10/04-03/06

Regular Member, Study Section (Subcommittee B, Developmental Biology), NIH-NICHD,
October 2001-June 2006

Member, Professional/Project Advisory Committee (PAC), University of Puerto Rico
Neuroscience Research Center (an NIH supported Center to support minority career
development and training; UPR, and Institute for Neurobiology, San Juan PR)

Member, Special Study Section, NIH-NIMH Neocortical Development, July 1994

Member, Review Panel, NIH - NINDS – Spinal Cord Regeneration, March 1998

Ad hoc member, NIH-NEI, VIS-C Study Section, October 1999

Ad hoc member, NIH-NIDCD Special Emphasis Panel, June 1999, March 2000, June 2002

Ad hoc member, NIH-NIA, MCDN2 Study Section, February, 2000; June 2000, October
2000, February 2001, June 2001, October 2001

Ad hoc member, NIH-NINDS, MCDN6 Study Section, October 2001

Ad hoc member, NIH-NIDCD, Special Review Panel, November 2002

Site Visitor, NICHD, E.K. Shriver Center, P01 Grant: Biochemical and Genetics Aspects of Mental Retardation

Ad hoc member, NIH-NIDCD, Special Review Panel, November 2002

Member, NIMH Special Review Panel for Conte Research Centers for Psychiatric Disorders, March, 2003

Member, National Academies National Research Council Research Associateship Programs Review Panel, March 2003-2006

Ad hoc member, NIH-NINDS, NCF Study Section, October 2004 (permanent, beginning Oct. 2005)

Chair, Special Study Section, NIH-NIEHS, November 2004

Chair, Special Emphasis Panel, Center for Scientific Review, March 2005

Member, Reverse Site Visit for NIA Program Project Application, October, 2005

Member, Special Study Section, NIEHS, March 2006

Member, Review Panel, Advancing Theory in Biological Sciences, NSF, August 2007

Member, Special Emphasis Panel, NINDS T32 grants for Neuroscience Training, Dec. 2008

Chair, Special Study Section, RFA for Cortical Development, NIMH, March, 2009

External Advisor, Intramural Research Program, NINDS, October, 2011

Ad Hoc Member, Post-doctoral fellowship review panel, Autism Speaks, May 2012

Ad Hoc Member, SEP, ZRG1 MDCN-E (96) NIH review panel, July 2012, November 2012, June 2013, March 2014

Participant, NIH panel on standardization of methods information and data for Neuroscience publication, June 2013

External advisory committee member, NIH COBRE program, Sanford Children's Research Institute, Sioux Falls SD

Additional Ad Hoc reviewing for NIH

Invited Speaker/participant (selected)

Participant, NATO Symposium: “Systems Approaches to Developmental Neurobiology,”
Varenna, Italy 1989

Participant, Cold Spring Harbor Symposium: “The Brain,” Cold Spring Harbor Laboratory,
Cold Spring Harbor, New York, 1990

Satellite Symposium on “Confocal Microscopy and Biological Imaging.” Society for
Neuroscience Annual Meeting, New Orleans, Louisiana, November 1991

Invited Speaker, Neuroscience Seminar Series, UNC-CH, October, 1993

Neuroscience Seminar Series: Anatomy Department and Neuroscience Program Seminar
Series: Cell-Cell Interaction During Nervous System Development, George Washington
University School of Medicine, February 1994

Symposium on “Development of the Cerebral Cortex.” British Society for Developmental
Biology, Edinburgh, U.K., April 1994

C.J. Herrick Lecture, FASEB Meeting, Anaheim, CA, April 1994

Symposium on “Neuronal Fate Determination”, 3rd Annual Altschul Symposium, University
of Saskatchewan, May 1994

Neuroscience Seminar Series, Boston University School of Medicine, October 1994

Invited Speaker, Department of Genetics, North Carolina State University, November, 1994

Symposium on “Early Neural Development in the Mouse”, Society for Neuroscience Annual
Meeting, November 1994

Invited Commentator: CIBA Symposium on Neocortical Development, London, UK,
November 1994.

Symposium Speaker, NC Society for Neuroscience, May 1995, Durham, NC

Symposium Speaker, Southeast Regional Meeting, American Society for Developmental
Biology, May 1995, Williamsburg, VA

Invited Speaker, Developmental Neurotoxicology Workshop, National Institute of
Environmental Health Sciences, September 1995, RTP, NC

Neuroscience Seminar Speaker, Center for Neurobiology and Behavior, Columbia University
College of Physicians and Surgeons, November 1995

Invited Speaker, NIMH Workshop on Hormones and Central Nervous System Development, Bethesda, MD, June 1996.

Invited Speaker, Symposium on Cortical Development, Annual Meeting of the American Clinical Neurophysiology Society, Boston, MA, September 1996.

Invited Speaker, Carnegie Institute of Embryology, Baltimore, MD, January 1997.

Invited Speaker, Department of Neurobiology, SUNY, Stonybrook Medical School, March 1997.

Invited Speaker, Section of Neurobiology, Yale University School of Medicine, March 1997.

Invited Speaker, Departments of Orthopaedic Surgery and Psychiatry, UCSF, April 1997

Symposium Speaker, American College for Neuropsychopharmacologists (ACNP), Symposium on Hormones and Brain Development, Hawaii, December 1997

Invited Speaker, Skirball Institute for Biomedical Research, New York University, March 1998.

Invited Speaker, St. Jude Children's Research Hospital, Department of Developmental Neurobiology, Memphis, TN, March 1998.

Invited Speaker, Center for Neurobiotechnology, Ohio State University, Columbus, OH, May 1998.

Invited Speaker, Department of Pharmacology and Physiology, University of Chicago, May 1998.

Invited Speaker, Bowman Gray School of Medicine, Department of Anatomy & Neurobiology, May 1998.

Invited Speaker, Symposium on Neurobiology, Human Behavior and the Law; Gruter Institute for Law and Behavioral Research, Squaw Valley, CA, June 1998.

Invited Speaker, "Schizophrenia: From Molecule to Public Policy", Santa Fe, NM, 1998.

Invited Speaker, University of Oregon Institute for Neuroscience, 1998.

Invited Speaker, Winter Conference for Brain Research, 1999.

Invited Speaker, Meeting on Molecular Mechanisms of Schizophrenia, Cold Spring Harbor Laboratory, Banbury Center Conference, April 1999.

Invited Speaker, Clinical Symposium, American Society for the Chemical Senses, Sarasota Florida, April 1999.

Invited Speaker, FASEB/Am. Assoc. Anatomists Symposium on Molecular Approaches to Early Brain Development, April 1999.

Invited Speaker, NIH-NIMH Center Directors Meeting, June 1999

Invited Speaker, NIEHS, August, 1999

Invited Speaker, Molecular & Cell Biology Seminar Series, University of Arizona, September, 1999

Participant, Workshop on Nervous system exposure to Toxins, EPA, Richmond VA, Oct. 1999

Visiting Lecturer, Monell Chemical Senses Institute, Philadelphia, PA, Dec. 1999

Invited Speaker, Medical College of Georgia, Augusta GA, Jan. 2000

Symposium Speaker, International Society for Developmental Neuroscience, Heidelberg, Germany, July 2000

Seminar Speaker, Children's Hospital of Philadelphia, Department of Genetics, Dec. 2000

Grand Rounds, Department of Psychiatry, Columbia University School of Medicine, Dec. 2000

Invited Speaker, Physiology Seminar Series, Johns-Hopkins University Medical School, March 2001

Invited Speaker and Session Chair, Gordon Research Conference, Chemical Senses: Taste and Smell, Salve Regina College, July 2001

Symposium Speaker, National Alliance for Research on Schizophrenia and Affective Disorders (NARSAD), October 2001

Invited Speaker, Neuroscience Seminar Series, Northwestern University, November 2001

Invited Speaker, Neuroscience Workshop, Eli Lilly & Co. Sarasota Florida, January 2002

Invited Speaker, Neuroscience Seminar Series, University of Colorado School of Medicine, January 2002

Invited Speaker, University of Kansas Medical Center, Dept. of Anatomy & Neurobiology, October 2002

Invited Speaker, University of Pennsylvania Department of Psychiatry, December 2002

Invited Speaker, Progress in Olfactory Development, meeting sponsored by NIDCD and NSF, Tuscon AZ, January 2003

Invited Speaker, Dept. of Pharmacology, UNC-CH, February 2003

Invited Symposium Speaker, Winter Conference on Brain Research, January 2004

Invited Symposium Speaker, International Society for Biological Psychiatry, February 2004

Invited Seminar Speaker, University of Queensland, Brisbane, Australia, February 2004

Symposium Speaker and Co-chair, Modeling Schizophrenia Vulnerability in Mice, ACNP, December, 2004

Faculty Speaker, UNC Developmental Biology Training Program Symposium, April 2005

Seminar Speaker, Department of Cell & Developmental Biology, UNC-CH, April 2005

Invited Speaker, Children's Hospital Research Institute, University of Cincinnati, Cincinnati OH, September 2005

Invited Speaker, CHOP /U.Penn, Developmental Biology Seminar Series, October, 2005

Invited Speaker, Children's Hospital of Arkansas/University of Arkansas School of Medicine, February 2006

Invited Speaker, Eighth Annual Symposium on Neurobiology and Neuroendocrinology of Aging, Bregenz, Austria, July 2006

Seminar Speaker, UNC Neuroscience Center, October 2006

Invited Seminar Speaker, University of New Mexico Department of Neuroscience Seminar Series, November 2006

Seminar Speaker, UNC Department of Cell & Molecular Physiology, April 2007

Invited Seminar Speaker, University of British Columbia, Institute for Biomedical Research, April 2007

Informal Seminar, Miller/Kaplan lab group, University of Toronto, September 2007

Invited Seminar Speaker/Honors Seminar Speaker, Bowdoin College Department of Biology, October 2007

Symposium Speaker, University of Georgia Developmental Biology Symposium, October 2007

Neuroscience Seminar Speaker, Division of Neuroscience, Children's Hospital Boston, October 2007

Neuroscience Seminar Speaker, Department of Psychiatry, McClean Hospital/Harvard Medical School, October 2007

Neuroscience Seminar Speaker, Department of Biology, Brandeis University, December 2007

Seminar Speaker, Neuroscience Series, Boston University, April, 2008

Seminar Speaker, Dept. of Anatomy & Neurobiology, Tufts University Medical Center, May, 2008

Seminar Speaker, Molecular Medicine and Genetics, Brigham & Women's Hospital, Dept. of Medicine, June 2008

Participant/Speaker, NIMH Workshop on Biomarkers in Mental Illness, NIMH, Bethesda MD, Sept. 2008

Seminar Speaker, Neuroscience Center, University of Helsinki, September 2008

Seminar Speaker, Ireland Laboratory for Developmental Neuroscience, UCSF, Dec. 2008

Neuroscience Seminar Speaker, University of Toledo School of Medicine, January 2009

Visiting Scientist/Colloquium Speaker, Neuroscience Program/Dept. of Psychology, Baldwin-Wallace College, Berea OH, March 2009

Invited Speaker, Neurogenomics and neuroimaging of developmental disorders, Dubrovnik, Croatia, April 2009

Seminar Speaker, Universidad Autonoma, Madrid, Spain, May 2009

Seminar Speaker, Cajal Institute, Madrid, Spain, May 2009

Seminar Speaker, George Washington University School of Medicine, Dept. of Pharmacology, June 2009

Seminar Speaker, Children's Research Institute, Northwestern University Feinberg School of Medicine, March 2010

Seminar Speaker, Committee on Neurobiology, University of Chicago, March 2010

Seminar Speaker, Department of Pediatric Neurology, Children's National Medical Center, September 2010

Speaker, Grand Rounds, Department of Psychiatry, GW University School of Medicine and Health Sciences, September, 2010

Symposium Speaker, PIRE-GERT-SNRP Nsci.Symposium, Howard University, October, 2010

Seminar Speaker, Georgetown University Department of Biology, October, 2010

Symposium Speaker, Society of Craniofacial Genetics Meeting, November, 2010

Seminar Speaker, University of Texas at Houston School of Medicine, December, 2010

Seminar Speaker, Uniformed Services Health Science University, February 2011

Seminar Speaker, Georgetown Neuroscience Program, February 2011

Seminar Speaker, West Virginia University Neuroscience Program, February 2011

Seminar Speaker, NIMH Genes, Cognition and Psychosis Program National Institute of Mental Health/NIH, March 2011

Seminar Speaker, King's College London Neuroscience Group, July 2011

Seminar Speaker, Department of Human Anatomy, Oxford University, July 2011

Speaker, Grand Rounds, Department of Psychiatry, University of Vermont School of Medicine, October 2011

Seminar Speaker, Neuroscience Program, University of Vermont, October 2011

Symposium Speaker, Society of Biol. Psych. Annual Meeting, Philadelphia PA, May 2012

Invited Speaker, 8th Biennial Int. 22q11.2 Deletion Syndrome Mtg., Orlando, FL, July 2012

Invited Speaker, Simons Found. Workshop on Cortical Development in Autism, Sept. 2012

Invited Speaker, Brown University Neuroscience Seminar Series, October 2012

Invited Speaker, NINDS Neuroscience Seminar Series, December 2012

Symposium Speaker, GW Institute for Neuroscience Symposium, May 2013

Invited Speaker, Yale University Child Study Center, September, 2013

Invited Speaker, UCLA Neuroscience Seminar Series, October, 2013

Invited Speaker, Children's Hospital of Los Angeles Neuroscience Seminar Series, Oct. 2013

Invited Speaker, University of Wisconsin Milwaukee Neuroscience Program, Feb. 2014

Invited Speaker, University of Colorado Health Sciences Neuroscience Program, March 2014

Invited Speaker, Sanford Children's Research Institute Symposium, May 2014

Invited Speaker Biennial 22q11.2 Deletion Syndrome Meeting, Mallorca Spain, June 2014

Invited Speaker, University of Virginia Neuroscience Seminar Series, October 2014
Invited Speaker, AAAS Dialogue on Science, Ethics and Religion, December, 2014
Invited Speaker, Children's Hospital Boston, Dept. of Genetics, January 2015
Invited Speaker, University of South Carolina Dept. of Biological Sciences, December 2016
Invited Speaker, Howard University Dept. of Physiology, January 2017
Discussion Leader, Gordon Conference on Neural Crest and Cranial Placodes, February 2017
Invited Speaker, Virginia Commonwealth University School of Medicine, February 2017
Invited Speaker, Indiana University/Purdue University, Indianapolis, March 2017
Invited Speaker, Wake Forest University School of Medicine, March 2017
Invited Speaker, GW Institute for Neuroscience Seminar Series, June 2017
Invited Speaker, 60th birthday Symp. For Chris Walsh, Boston Children's Hosp. July 2017
Invited Speaker, Simons Foundation Annual Meeting, October, 2017
Invited Speaker, Genetic Grand Rounds, Hosp. for Sick Children/U. Toronto, Oct. 2017
Invited Speaker, Satellite Meeting on Dysphagia, Society for Neuroscience Meeting,
November 2017
Invited Speaker, Virginia Tech Carilion School of Medicine, Pioneers in Biomedical
Research Series, December 2017
Invited Speaker, Grand Rounds, Dept. of Psychiatry, GW School of Medicine, May 2018
Invited Speaker, Children's Research Institute, Alberta Children's Hospital, June 2018
Platform Speaker, 22q11.2 DS Society Biennial Meeting, Whistler BC, Canada, July 2018
Symposium Speaker, Sanford Children's Research Institute, Sanford Health/Children's
Hospital, Sioux Falls, SD, August 2018
Invited Speaker, VTC-Fralin Biomedical Research Institute, May, 2019
Invited Speaker, University of AL-Birmingham, Dept. Cell, Dev. & Integ. Biol, May 2019
Invited Speaker, University of Maryland, Brain & Behavior Initiative, June 2019
Invited Speaker, Dept. of Biology, Virginia Tech, June 2019
Invited Speaker, Boston Children's Hospital Dept. of Pathology, November 2019
Invited Speaker, Children's Hospital of Philadelphia, December 2019

Ad hoc reviewer:

Journal of Neurobiology
European Journal of Neuroscience
Cerebral Cortex
Developmental Biology
Development
Genesis

Mechanisms of Development
Nature Neuroscience
Nature Communications
Neuroimage
Neuron
American Journal of Physical Anthropology
Journal of Neuroscience
Journal of Comparative Neurology
Journal of Visualized Experiments
Brain Research
Visual Neuroscience
Proceedings of the National Academy of Sciences
Biological Psychiatry
Brain Research
Neuroscience
Schizophrenia Bulletin
Synapse
Developmental Neuroscience
Developmental Neurobiology

University Service

at UNC-Chapel Hill:

Department of Laboratory Animal Medicine (DLAM) Advisory Committee: 1998- 2004; Chair,
DLAM Advisory Committee: 2002-2004

Member, Research Advisory Council, School of Medicine (3 year term): 2002-2005

Member, Genetics and Molecular Biology Qualifying Examination Committee: 2002

Member, 5year review committee for David Lee, Chairman, Dept. of Biochemistry, 2002

Member, Genetics and Molecular Biology Admissions Committee: 2003-2004

Ph.D. Thesis Committee Member: Curriculum in Neurobiology, Curriculum in Genetics and
Molecular Biology, Department of Cell & Molecular Physiology, Dept. of Cell &
Developmental Biology, Department of Biology

Member, Executive Committee, UNC-CH Developmental Biology Training Program, 2004-
2010; Advisor, annual Developmental Biology Symposium 2004-2007

Member, Executive Committee, UNC-CH Curriculum in Neurobiology, 2005-2008

Member, Research Advisory Committee, Carolina Institute for Developmental Disabilities, 2008-
2010

University Service at GW:

Member: Institute for Biomedical Studies graduate faculty

Member, Advisory Committee: GW Initiative on Autism and Developmental Disorders

Member, NSDA Training Grant Faculty, CNMC/GW

Member, IDDRC Core Faculty, CNMC/GW

Chair, Faculty Search Committees, GW Institute for Neuroscience

Member, Innovation and Interdisciplinary Research Task Force, Provost's Strategic Planning Initiative, March-May 2012

Member, Research Advisory Council, Fall 2013-2019

Member, Strategic Planning Committee for Research, GW School of Medicine and Health Sciences, January-May 2013

Director, IBS Ph.D. Program in Neuroscience, Fall 2017-Fall 2019