

Maria J. Donoghue Velleca, Ph.D.

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University Leadership Experience:

- 2020-present *Dean of the Faculty of Arts & Sciences*
William & Mary, Williamsburg, VA
- 2015-2017 *Senior Associate Dean for Faculty Affairs and Strategic Planning*
Georgetown College of Arts and Sciences, Georgetown University, Washington, DC
- 2013-2016 *Advisory Board Member*, Center for New Design in Learning and Scholarship
Georgetown University, Washington, DC
- 2010-2015 *Director*, Georgetown University Howard Hughes Medical Institute Program
Georgetown College of Arts and Sciences, Georgetown University, Washington, DC
- 2009-2015 *Faculty Senate Steering Committee Member*
Georgetown University, Washington, DC
- 2007-2015 *Director of Neurobiology Undergraduate Program*
Department of Biology, Georgetown University, Washington, DC

Additional Educational Governance Experience:

- 2013-2019 *Trustee*
2016-18 *Chair of the Governing Board*
St. Albans School for Boys, Washington, DC

Academic Positions:

- 2016-2020 *Professor*
Biology Department, Georgetown University, Washington, DC
- 2010-2016 *Associate Professor*
Biology Department, Georgetown University, Washington, DC
- 2006-2010 *Assistant Professor*
Biology Department, Georgetown University, Washington, DC
- 1998-2006 *Assistant Professor*
Department of Neurobiology, Yale University School of Medicine, New Haven, CT

Research Training:

- 1995-1998 ***Post-Doctoral Fellow***
Section of Neurobiology, Yale University School of Medicine, New Haven, CT; Pasko Rakic, advisor
- 1993-1995 ***Post-Doctoral Fellow***
Department of Anatomy and Neurobiology, Washington University School of Medicine, St. Louis, MO; Joshua R. Sanes, advisor
- 1990-1993 ***Graduate Student***
Program in Molecular and Cellular Biology, Washington University School of Medicine, St. Louis, MO; John P. Merlie and Joshua R. Sanes, advisors
- 1988-1990 ***Graduate Student***
Department of Biochemistry, Boston University School of Medicine, Boston, MA; Nadia Rosenthal, advisor

Education:

- 1990-1993 Ph.D., Program in Molecular and Cellular Biology, Washington University School of Medicine, St. Louis, MO
- 1988-1990 Ph.D. Candidate, Department of Biochemistry, Boston University School of Medicine, Boston, MA
- 1981-1985 B.S., Departments of Biology and Psychology, Boston College, Chestnut Hill, MA

Awards:

- 2013 Recipient, College Dean's Academic Council Award for Faculty Excellence, awarded by the College Dean's Academic Council, Georgetown University
- 2012 Recipient, Bunn Award for Faculty Excellence, awarded during University Commencement by Georgetown College Class of 2012, Georgetown University
- 2011 Recipient, Dean's Award for Excellence in Teaching, awarded by Georgetown College Dean, Georgetown University
- 2009 Recipient, Outstanding Graduate Mentor in Biology Award, Georgetown University
- 2007 Recipient, Interdisciplinary Program in Neurosciences graduate student selected Outstanding Faculty Award, Georgetown University
- 2005 Nominee, The Alice Bohmfalk Award for excellence in basic science teaching, Yale University School of Medicine
- 1995-1998 Life Sciences Research Foundation Postdoctoral Fellow, Genentech Scholar
- 1994-1995 McDonnell Center for Cellular and Molecular Neurobiology Postdoctoral Fellow, Washington University School of Medicine
- 1993-1994 W. M. Keck Fellow, Washington University School of Medicine
- 1993 The Needleman Award for Outstanding Research in Pharmacology, Washington University School of Medicine
- 1993 The Barbara Jakschik Award for Outstanding Academic Performance and Research, Washington University School of Medicine
- 1993 Spencer T. and Ann W. Olin Medical Scientist Fellow, Washington University School of Medicine

- 1992 The 15th Annual James L. O'Leary Prize for Research in Neuroscience, Washington University School of Medicine
- 1988 Meritorious Recognition Award based upon academic performance, Boston University School of Medicine

Honors:

- 2017 Presidential Nominee, Jesuit Leadership Seminar on Higher Education Leadership, American Jesuit Universities and Colleges
- 2016 Presidential Nominee, Academy for Innovative Higher Education Leadership
- 2014-2016 Presidential Nominee, Ignatian Colleagues Program. American Jesuit Universities and Colleges

Public Speaking:

- 2018 Reader of Citation, University commencement, Georgetown University
- 2017 Commencement Speaker, St. Albans School, Washington National Cathedral
- 2016 Speaker, Paul Herman retirement service, St. Albans School, Washington National Cathedral
- 2015 Prayer at President's convocation, Georgetown University, Gaston Hall
- 2013 Speaker at College Academic Committee, Georgetown University, Copley Formal Lounge
- 2012 speaker at Tropia Awards ceremony, Georgetown University, Gaston Hall

Institutional Responsibilities:

Georgetown:

- 2018 Chair, Neurobiology Search Committee, Biology Department
- 2018 Advisor to Provost on Nontenureline (NTL) Faculty framework
- 2017 University Honor Council
- 2017 Biomedical Graduate Education Committee, Georgetown University Medical Center
- 2016-17 Vice-Chair, Georgetown College Dean's Search Committee
- 2015-17 Senior Associate Dean for Faculty Affairs and Strategic Planning, Georgetown College
- 2013-14 Chair, Neurobiology Search Committee, Biology Department
- 2013-16 Athletic Advisory Board
- 2013-14 Provost's Faculty Visioning Committee
- 2012-14 Safety and Student Life Working Group, Georgetown Community Partnership
- 2012-14 Provost's Initiative on Technology-based Learning (ITEL) Committee
- 2012 College Admissions Committee, Early Action
- 2012- 16 Director, Georgetown University's Howard Hughes Medical Institute University Program
- 2011-12 Provost Search Committee
- 2011-12 Chair, Neurobiology Search Committee, Biology Department
- 2011 Teaching Responsibility Assessment Committee, Department of Biology
- 2011-13 Student Affairs faculty group on Student Engagement
- 2010-15 Committee on Undergraduate Education, Department of Biology
- 2010-11 Doyle Fellow for Diversity, Center for New Design for Learning and Scholarship
- 2009-15 Faculty Senate Steering Committee

2009-15 Faculty Senate Member
2009-10 College Dean's Committee on Liberal Arts Seminars
2008-16 Georgetown Women in Medicine Award Selection Committee, Georgetown University Medical Center
2007-12 Associate Director, Georgetown University's Howard Hughes Medical Institute University Program
2007-11 Interdisciplinary Program in Neuroscience Executive Committee, Georgetown University
2006-20 Engelhard Fellow for Student Wellness
2006-15 Director, Undergraduate Neurobiology Major
2006-11 Undergraduate Curriculum and Evaluation Committee, Department of Biology

St. Albans:

2018-19 Chair, Governing Board Diversity Committee
2016-18 Chair, Governing Board
2016-18 Board Member, Protestant Episcopal Cathedral Foundation
2015 Chair, Size of School Committee
2014 Chair, Financial Aid Working group

Yale:

2000-06 MD-PhD Program Admissions Committee
2001-06 Preclinical Medical School Curriculum Committee
1999-2006 Fellow, Berkeley College

Professional Service:

Journal Editor:

Co-Editor-in-Chief, *Frontiers in Neurogenesis*, 2009-15

Academic Review:

Consultant to Innovation Quarter, Wake Forest University, 2015
University of Delaware, Department of Biological Sciences, Chair of visiting committee and lead author of final report, 2012

Programmatic Review:

Committee of Visitors, Integrative Organismal Systems, NSF, 2012

Visiting Scholar:

EXROP, HHMI, 2011

Grant Review:

NIH, F32 and K22 Postdoctoral Awards, 2017
NIH Predoctoral Awards, 2013, 2014, 2017
HHMI University Grants, 2011, 2013
NSF Review Panel, 2007, 2005
NIH, NINDS (Neuronal Migration and Lissencephaly Special Emphasis Panel), 2003-2006
New York Spinal Cord Injury, 2001, 2004.

Journal Referee:

Cerebral Cortex, Development, Developmental Neurobiology, Genes and Development, Journal of Comparative Neurology, Journal of Neuroscience, Molecular Cellular Neuroscience, Neuron, Neuroscience, Neuroscience Letters, Proceedings of the National Academy of Sciences

Publications:

1. **Donoghue, M.**, Ernst, H., Wentworth, B., Nadal-Ginard, B., and Rosenthal, N. 1988. A muscle-specific enhancer is located at the 3' end of the myosin light chain 1/3 gene locus. *Genes and Development* 2, 1779-1790.
2. Rosenthal, N., **Donoghue, MJ.**, Ernst, HM., and Wentworth, B. 1989. Characterization of a muscle-specific enhancer downstream of the myosin light chain 1/3 locus. In; *Cellular and Molecular Biology of Muscle Development* (Alan Liss), 725-733.
3. Rosenthal, N., Kornhauser, J., **Donoghue, M.**, Rosen, K., and Merlie, J. 1989. Myosin light chain enhancer activates muscle-specific, developmentally regulated gene expression in transgenic mice. *Proceedings of the National Academy of Sciences* 86, 7780-7784.
4. Wentworth, B., **Donoghue, M.**, Engert, J., Berglund, E., and Rosenthal, N. 1990. Paired MyoD binding sites regulate myosin light chain gene expression. *Proceedings of the National Academy of Sciences* 88, 1242-1246.
5. Rosenthal, N., Berglund, E., Wentworth, B., **Donoghue, M.**, Winter, B., Bober, E., Braun, T., and Arnold, H. 1990. A highly conserved enhancer downstream of the human MLC1/3 locus is a target for multiple myogenic determination factors. *Nucleic Acids Research* 18, 6239-6246.
6. **Donoghue, MJ.**, Merlie JP., Rosenthal, N., and Sanes, JR. 1990. A rostrocaudal gradient of transgene expression in adult skeletal muscle. *Proceedings of the National Academy of Sciences* 88, 5847-5851.
7. **Donoghue, MJ.**, Alvarez, JD., Merlie, JP., and Sanes, JR. 1991. Fiber type- and position-dependent expression of a myosin light chain-CAT transgene detected with a novel histochemical stain for CAT. *Journal of Cell Biology* 115, 423-434. (with cover image)
8. **Donoghue, MJ.**, Morris-Valero, R., Johnson, YJ., Merlie, JP., and Sanes, JR. 1992a. Mammalian muscle cells bear a cell-autonomous, heritable memory of their rostrocaudal position. *Cell* 69, 67-77. (with commentary)
9. Sanes, JR., **Donoghue, MJ.**, and Merlie, JP. 1992. Positional differences among adult skeletal muscle fibers. In: *Neuromuscular Development and Disease*. Kelly, A.M. and Blau, H., M. (eds.), New York: Raven Press Ltd. 195-210.
10. **Donoghue, MJ.**, Patton, BL., Sanes, JR., and Merlie, JP. 1992b. An axial gradient of transgene methylation in murine skeletal muscle: genomic imprint of rostrocaudal position. *Development* 116, 1101-1112.
11. Sanes, JR., **Donoghue, MJ.**, Wallace, MC., and Merlie, JP. 1992. Rostrocaudal differences among muscles revealed by a transgene: graded expression at low copy number. *Cold Spring Harbor Symposia on Quantitative Biology* 57, 451-460.
12. **Donoghue, MJ.** and Sanes, JR. 1994. All muscles are not created equal. *Trends in Genetics* 10, 396-401.
13. Rao, MV., **Donoghue, MJ.**, Merlie, JP., and Sanes, JR. 1996. Distinct regulatory elements control muscle-specific, fiber type-selective, and axially-graded expression of a myosin light chain gene in transgenic mice. *Molecular and Cellular Biology* 16, 3909-3922.

14. **Donoghue, MJ.**, Lewis, RM., Merlie, JP., and Sanes, JR. 1996. The Eph ligand AL-1 is expressed by rostral muscles and inhibits outgrowth from caudal neurons. *Molecular and Cellular Neuroscience* 8, 185-198.
15. **Donoghue, MJ.**, and Rakic, P. 1999. Molecular Evidence for the early specification of presumptive functional domains in the embryonic primate cerebral cortex. *Journal of Neuroscience* 19, 5967-5979.
16. **Donoghue, MJ.**, and Rakic, P. 1999. Molecular gradients and compartments in the embryonic primate cerebral cortex. *Cerebral Cortex* 9, 586-600.
17. Sestan, N., Rakic, P., and **Donoghue, MJ.** 2001. Independent parcellation of the embryonic visual cortex and thalamus revealed by combinatorial *Eph/ephrin* gene expression. *Current Biology* 11, 39-43. (with cover image)
18. Ogunshola OO., Antic A., **Donoghue MJ.**, Fan SY., Kim H., Stewart WB., Madri JA., and Ment LR. 2002. Paracrine and autocrine functions of neuronal vascular endothelial growth factor (VEGF) in the central nervous system. *Journal of Biological Chemistry* 277, 11410-11415.
19. Yun, ME., Johnson, RR., Antic, A., and **Donoghue, MJ.** 2003. EphA family gene expression in the developing mouse neocortex: regional patterns reveal intrinsic programs and extrinsic influence. *Journal of Comparative Neurology* 456, 203-216. (with cover image)
20. Kolk, SM., Whitman, MC., Yun, ME., *Shete, P.*, and **Donoghue, MJ.** 2005. A Dynamic Subpopulation of Deep Layer Neurons in the Developing Cerebral Cortex Identified by Tbrain-1-Regulated Transgene Expression. *Molecular and Cellular Neuroscience* 30, 538-51.
21. Miller, KJ., Kolk, SM., and **Donoghue, MJ.** 2006. *EphA7-ephrin-A5* Signaling in Somatosensory Cortex: Developmental Restriction of Molecular Domains and Postnatal Maintenance of Functional Compartments. *Journal of Comparative Neurology* 49, 627-642.
22. North HA, Zhao X., Kolk, SM., Clifford MA., and **Donoghue, MJ.** 2009. Promotion of Proliferation in the Developing Cerebral Cortex by EphA4 Forward Signaling. *Development* 136, 2467-2476.
23. North, HA., *Karim, A.*, Jacquin, MF, and **Donoghue, MJ.** 2010. EphA4 is Necessary for Spatially Selective Peripheral Somatosensory Topography. *Developmental Dynamics* 239, 630-638.
24. Clifford, MA., Kanwal, J., Dzakpasu, R., and **Donoghue, MJ.** 2011. EphA4 expression promotes network activity and spine maturation in cortical neuronal cultures. *Neural Development* 6, 1-13.
25. North, HA, Clifford, MA, and **Donoghue, MJ.** (2012) 'Til Eph do us part: Intercellular signaling via Eph receptors and ephrin ligands guides cerebral cortical development from birth through maturation. *Cerebral Cortex*, 23:1765-73
26. Lehigh, K., North, HA., Baranoski, J., Leonard, C. and **Donoghue MJ.** 2013. Parcellation of the Thalamus into Distinct Nuclei reflects EphA Expression and Function. *Gene Expression Patterns* 13, 454-463.
27. Clifford, MA., Athar, W., Russo, A., Sampognaro, P., Van der goes, MS., Leonard, CE, Zhao, X, Vicini, S. and **Donoghue, MJ.** 2014. EphA7 signaling guides cortical dendritic development and spine maturation. *Proceedings of the National Academy of Sciences* 111, 4994-4999.
28. Chen, C., Lee, G., Pourmorady, A., Sock, E., and **Donoghue, MJ.** 2015. Sox4 and Sox11 orchestrate cellular expansion and neuronal differentiation during corticogenesis. *Journal of Neuroscience* 35, 10629-42. (with Cover Image and Commentary)
29. Chen, C., Jing, J., Silva, E., and **Donoghue, MJ.** 2016. Cross-species functional analyses reveal shared and separate roles for Sox11 in frog primary neurogenesis and mouse cortical neuronal differentiation. *Biology Open* 5, 409-17.

30. Chen, C., Lee, G., and **Donoghue, MJ**. Submitted. MicroRNA-92a affects the development of intermediate progenitors in the developing mouse neocortex by regulating Sox4 expression.
31. Leonard, CE, Baydyuk, M., Stepler, MA, Burton, DA, and Donoghue, MJ. Submitted. EphA7 isoforms differentially regulate cortical dendrite development. *PLOS One*.

Research Funding:

- 2015-2018 *NIH* (NIMH) R15 MH105907, Regulation of cortical neuronal expansion and maturation by SoxC genes. Principal Investigator. This grant examines the molecular basis of the transition of an apical progenitor to an intermediate progenitor cell to a differentiated neuron.
- 2009-2012 *NSF* 0923642, Control of Cerebral Cortical Proliferation, Principal Investigator. This grant funded the investigation of the role of intracellular signaling via Eph family members on the control of cell proliferation in the cerebral cortex.
- 2001-2006 *NIH* (NINDS) R01 NS 39979, Molecular Specification of Developing Cortical Areas, Principal Investigator. This grant examined the molecular bases for the emergence of distinct cortical areas during development.
- 1999-2003 *NIH* (NINDS) P01 NS35476, Adaptive Mechanism of Developing Brain, Principal Investigator, Program 3. This grant examined shifts in neural gene expression following postnatal ischemia.

Programmatic Funding:

- 2010-2015 *HHMI*, University grant, This grant funds a research scholars program for Georgetown and Montgomery Community College students during both the academic year and summers. A partnership with high school students from Washington, DC public schools is also a component.

Selected Talks:

- 2018 Duke University, Biological Sciences
- 2016 University of California, San Diego
Howard University
- 2015 Wake Forest University, Innovation Quarter
- 2014 Southern Methodist University, Department of Biology
Columbia University, Neuroscience Program
Johns Hopkins University, Department of Biology
- 2013 Washington University in St. Louis, Neuroscience Program
University of Maryland, Baltimore County, Biological Sciences
Northwestern University, Department of Pathology
- 2012 University of Delaware, Department of Biological Sciences
Loyola University, Department of Biology
- 2011 Winter Brain Conference, Breckenridge, CO
Medical College of Ohio, Neuroscience Program
- 2010 University of Pittsburgh, Department of Neurobiology
Georgetown University, Neuroscience Department

University of Connecticut, Neuroscience Program
2009 Mt. Sinai, Department of Developmental and Cell Biology
Wesleyan University, Department of Biology
Duke University School of Medicine, Department of Neurobiology
2008 Brown University, Department of Neuroscience
Tufts University Medical School, Department of Anatomy and Neurobiology

Teaching Experience:

Georgetown:

2012 BIOL-007: Brain and the Evolution of Behavior, Department of Biology, co-directed with Professor Janet Mann, Departments of Biology and Psychology
2009-2014 BIOL-380: Sensory Systems, Department of Biology
2007-2010 Instructor, IDST-014: Science and Society Seminar, Georgetown College, joint with Professor James Mattingly, Department of Philosophy
2007-2014 Director, Biol-401: Senior Seminar in Neurobiology, Department of Biology
2007- 2015 Director, Biol-110: Critical Readings in Biology for Hughes Research Scholars (Summer course)
2006-present Instructor, BIOL-195: Gateway to Neurobiology, Department of Biology
2006-11, 2013, 2018 Instructor, Biol-013: An Issues Approach to Biology, Department of Biology
2006-2010 Director, Biol-101: Freshman Seminar in Biology, Department of Biology

Yale:

2005 Instructor, An Issues Approach to Biology, Department of Molecular Cellular Developmental Biology, Yale College
1999-2006 Section Head and Lecturer, Structure and Function of the Human Nervous System, Department of Neurobiology, Yale Medical School
1999- 2006 Guest Lecturer, Developmental Neurobiology, MIT, Department of Brain and Cognitive Sciences
2001-2005 Guest Lecturer, Cortical Development and Plasticity, Department of Molecular Cellular Developmental Biology, Yale College
2001-2006 Lecturer and Discussant, Principles of Neuroscience, Yale, Graduate Neuroscience Program
1999-2006 Discussant, Neuroethics, Yale, Graduate Neuroscience Program

Membership:

2015 Cosmos Club, Washington, DC
1993-present Society for Neuroscience