

## Biographical Sketch

Leslie P. Tolbert, Ph.D.

### (a) Education

Radcliffe College, Harvard University	Applied Mathematics	A.B. 1973
Harvard University	Anatomy, Medical Sciences	Ph.D. 1978
Harvard University	Neurobiology postdoc	1978-81
Cold Spring Harbor	Neurobiology of Leech course	summer 1982

### (b) Appointments

#### Current positions:

2002- Regents' Professor, University of Arizona  
2009- Professor (with tenure), Department of Neuroscience, and (joint appointment) Department of Cellular and Molecular Medicine, University of Arizona

#### Previous positions:

2011-13 Senior Vice President for Research, University of Arizona  
2010-13 Acting Director, Arizona Research Laboratories, University of Arizona  
2005-11 Vice President for Research, Graduate Studies, and Economic Development, University of Arizona  
2005-06 Interim Dean of the Graduate College and Director of Graduate Interdisciplinary Programs, University of Arizona  
1997-04 Chair, campus-wide Committee on Neuroscience and Graduate Interdisciplinary Program in Neuroscience, University of Arizona  
1995-09 Professor (with tenure), Arizona Research Laboratories Division of Neurobiology, and (joint appointment) Department of Cell Biology and Anatomy, University of Arizona  
1990-95 Associate Professor (with tenure), Arizona Research Laboratories Division of Neurobiology, and (joint appointment) Department of Anatomy, University of Arizona  
1987-90 Assistant Professor, Arizona Research Laboratories Division of Neurobiology, and (joint appointment) Department of Anatomy, University of Arizona, Tucson, AZ  
1982-87 Assistant Professor, Department of Anatomy and Cell Biology, Georgetown University Schools of Medicine and Dentistry, Washington, D.C.  
1981-82 Research Associate, Department of Cellular and Developmental Biology, Harvard University, Cambridge, MA (with Dr. Ronald Calabrese)

### (c) Selected publications

Gibson NJ, Rossler W, Nighorn AJ, Oland LA, Hildebrand JG, Tolbert LP (2001) Neuron-glia communication via nitric oxide is essential in establishing antennal-lobe structure in *Manduca sexta*. Dev. Biol. 240:326-39  
Goriely A, Secomb T, Tolbert LP (2002) Effect of the glial envelope on extracellular K<sup>+</sup> diffusion in olfactory glomeruli. J. Neurophysiol. 87:1712-1722  
Higgins MR, Gibson NJ, Eckholdt PA, Nighorn A, Copenhaver P, Nardi J, Tolbert LP (2002) Different isoforms of fasciclin II are expressed by a subset of developing olfactory receptor neurons and by

- olfactory-nerve glial cells during formation of glomeruli in the moth *Manduca sexta*. Dev. Biol. 244:134-154
- Lohr C, Tucker E, Oland LA, Tolbert LP (2002) Development of depolarization-induced calcium transients in insect glial cells is dependent on the presence of afferent axons. J. Neurobio. 52:85-98
- Tucker ES, Tolbert LP (2003) Reciprocal interactions between olfactory receptor axons and olfactory nerve glia cultured from the developing moth *Manduca sexta*. Dev. Biol. 260:9-30
- Oland LA, Tolbert LP (2003) Key interactions between neurons and glial cells during neural development in insects. Ann. Rev. Entomology 48:89-110
- Tolbert LP, Oland LA, Christensen TC, Goriely AR (2003) Neuronal and glial morphology in olfactory systems: Significance for information processing and underlying developmental mechanisms. Brain and Mind 4:27-49
- Tolbert LP, Oland LA, Tucker ES, Gibson NJ, Higgins M, Lipscomb B (2004) Bidirectional influences between neurons and glial cells in the developing olfactory system. Prog. Neurobio. 73:73-105
- Oland LA, Tolbert LP (2010) Role of glial cells in neural circuit formation: Insights from research in insects. Glia: PMID: 21125646.
- Tucker ES, Oland LA, Tolbert LP (2004) *In vitro* analyses of interactions between olfactory receptor growth cones and glial cells that mediate axon sorting and glomerulus development. J. Comp. Neurol. 472:478-495
- Gibson NJ, Hildebrand JG, Tolbert LP (2004) Glycosylation patterns are sexually dimorphic throughout development of the olfactory system in *Manduca sexta*. J. Comp. Neurol. 476:1-18
- Oland LA, Gibson NJ, Tolbert LP (2005) Nitric oxide-mediated signaling from olfactory receptor axons to peripheral ensheathing glia in the moth olfactory pathway. Chemical Senses 30:265-278
- Gibson NJ, Tolbert LP (2006) Activation of epidermal growth factor receptor mediates receptor axon sorting and extension in the developing olfactory system of the moth *Manduca sexta*. J. Comp. Neurol. 495:554-572
- Oland LA, Biebelhausen JP, Tolbert LP (2008) Glial investment of the adult and developing antennal lobe of *Drosophila*. J. Comp. Neurol. 509:526-550
- Gibson NJ, Tolbert LP, Oland LA (2009) Roles of specific membrane lipid domains in EGF receptor activation and cell adhesion molecule stabilization in a developing olfactory system. PLoS One 4(9):e7222
- Oland LA, Gibson NJ, Tolbert LP (2010) Localization of a GABA transporter to glial cells in the developing and adult olfactory pathway of the moth *Manduca sexta*. J. Comp. Neurol. 15:815-838
- Koussa MA, Tolbert LP, Oland LA (2010) Development of a glial network in the olfactory nerve: role of calcium and neuronal activity. Neuron Glia Biol. 6:245-261
- Gibson NJ, Tolbert LP, Oland LA (2012) Activation of glial FGFRs is essential in glial migration, proliferation, and survival and in glia-neuron signaling during olfactory system development. PLoS ONE 7(4):e33828.

**(d) Selected service activities**

**University of Arizona:**

- 1998 Member, search committee for Vice President for Research
- 1998-05 Member, Vice-Chair, and Chair, Graduate Interdisciplinary Programs Advisory Council (elected)
- 1998-05 Member, Steering Committee for Applied Mathematics
- 1999-00 Member, search committee for Provost
- 1999-01 Member, search committee for Vice President for Health Sciences and Dean of College of Medicine
- 2000 Acting Director, ARL Division of Neurobiology
- 2000-02 Member, steering committee for Institute for Biomedical Science and Biotechnology;

- convener of *ad hoc* working group on molecular neuroscience
- 2002-05 Member (representing the faculty), President's Finance Committee
- 2003 Chair, self-study committees for Committee on Neuroscience and ARL Division of Neurobiology, charged with writing reports for Academic Performance Review
- 2003-04 Member, Focused Excellence team on Cognitive Sciences and Neurosciences
- 2004 Chair, committee to review UA's Financial Support Services
- 2005 Member, search committee for University of Arizona Federal Relations Director
- 2005-13 Member, President's Cabinet, Provost's Leadership Team, University Space Committee
- 2006-09 Member, Committee on the Status of Women
- 2006-13 Member, President's Large Telescopes Directorate
- 2008-10 Chair, Provost's Strategic Advancement Advisory Council on Science and Engineering
- 2009 Chair, Search Advisory Committee for recruitment of University General Counsel
- 2009-10 Co-chair, Provost's Strategic Advancement Advisory Council on Humanities, Social Sciences, and Fine Arts
- 2011-12 Member, Search Advisory Committee for recruitment of University of Arizona President
- 2011-13 Member, President's Executive Finance Committee (financial leadership for University)
- 2012-13 Member, Search Advisory Committee for recruitment of Senior Vice President for Health Sciences
- 2012-13 Member, LCME (Liaison Committee on Medical Education) Task Force to produce College of Medicine's application for continuing accreditation

**Extramural:**

- 1991 Member, NSF Advisory Panel, Instrumentation and Instrument Development Program
- 1991-95 Regular Member, NIH Neurology B-1 Study Section
- 1994 Chair, NIH Behavioral and Neurosciences Special Emphasis Panel
- 1994 Invited participant, NSF Workshop to develop an international database on identified neurons
- 1995-96 President and founding member, Tucson Chapter of the Society for Neuroscience
- 1998-05 Member, Editorial Board, Chemical Senses
- 2000-05 Member, Program Committee, Society for Neuroscience (served as Chair in 2003-2004)
- 2001 External evaluator, University of Utah's Interdisciplinary Program in Neuroscience
- 2001-05 Associate Editor, Journal of Comparative Neurology
- 2002-03 President, Association of Neuroscience Departments and Programs
- 2003-08 Co-chair, statewide Neurosciences Platform Committee for Arizona Biosciences Roadmap
- 2002 External evaluator, Montana State University's NSF-funded Integrated Graduate Education and Research Training Program in Computational Neuroscience
- 2005-12 Member, Critical Path (C-Path) Institute Operations Board
- 2005-12 Member, Campus Research Corporation Board of Directors (for UA Tech Park)
- 2005-13 Member Representative, Large Binocular Telescope Board of Directors
- 2006-07 President, Association for Chemoreception Sciences
- 2006-10 Councilor, Society for Neuroscience
- 2006- Member, Arizona Bioscience Roadmap Steering Committee
- 2006-08 Member, Governor's Council on Innovation and Technology
- 2006-10 Member-at-Large, Neuroscience Section, AAAS (elected)
- 2006-13 Active member, American Association of Universities (AAU) Senior Research Officers group
- 2006-13 Active member, Association of Public and Land-grant Universities (APLU) Council on Research Policy and Graduate Education (Chair, 2011-2012)
- 2006-13 Board member, Arizona Alzheimer's Research Consortium
- 2007 External consultant, Ohio Board of Regents, Innovation Incentive Program
- 2007-12 Member, Arizona Technology Council Board of Directors
- 2008-09 Member, U.S. Representative Gabrielle Giffords' (D-AZ) Solar Energy Advisory Committee

- 2008-13 Member, Executive Committee, Southern Arizona Leadership Council  
 2008- Co-chair, Biosciences Leadership Council of Southern Arizona  
 2010 Provided, by invitation, written and oral testimony for hearing on “The State of Research Infrastructure at U.S. Universities” before the Subcommittee on Research and Science Education of the Committee on Science and Technology of the U.S. House of Representatives; coordinated with AAU and APLU
- 2010- Member, Society for Neuroscience Committee on Committees and Awards Committee  
 2012 Provided, by invitation, written and oral testimony for hearing on “The Role of Research Universities in Securing America’s Future Prosperity: Challenges and Expectations” before the Subcommittee on Research and Science Education of the Committee on Science and Technology of the U.S. House of Representatives; coordinated with AAU and APLU and timed to coincide with release of NRC report of the same name
- 2013 Member of organizing committee and convener for “Southwestern Regional Conference to Renew the Partnership for Innovation, Prosperity, and Security,” held in Oro Valley, AZ, as a follow-up to the 2012 NRC report on “Research Universities and the Future of America”

**(e) Grants**

**Most recent research grants completed:**

- 2000-05 NIH Program Project Grant for "Neural development: intercellular and humoral control," competitive renewal. 2<sup>nd</sup> competitive renewal of grant begun in 1990. R.B. Levine, overall PI; L.A. Oland, L.L. Restifo, N.J. Strausfeld, L.P. Tolbert, Co-PI's. L.P. Tolbert, PI of Project #5, “Development of sexually dimorphic olfactory glomeruli,” and of Imaging Core, and Co-Investigator on Project #2, “Glial development during glomerulus formation.”
- 1999-04 NIH R01 Grant, "Intercellular interactions in developing glomeruli," 4<sup>th</sup> competitive renewal of grant begun in 1984. L.P. Tolbert, PI

**Other recent grants:**

- 2012- Howard Hughes Medical Institute Precollege and Undergraduate Science Education Program Grant. L.P. Tolbert, PI
- 2012-13 NIH Infrastructure Grant: “College of Medicine Phoenix Campus Vivarium Phase I Construction.” L.P. Tolbert, PI for last year of ARRA grant, as facility was completed
- 2006-13 NSF: “Eradicating Subtle Discrimination,” ADVANCE Program for Institutional Transformation (to promote success of women faculty in science, engineering, and math). L.P. Tolbert, PI; L. Gerken, R. Richardson, A. Vaillancourt, co-PI's
- 2005-10 Department of Energy: “Environmental and Natural Resources Facility – Phase II Planning.” L.P. Tolbert, PI