

## **BIOGRAPHICAL SKETCH**

Lucia Galli-Resta

Born 19 XI 1959 Bologna

## **EDUCATION**

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| 1983    | Laurea (BSc) in Physics cum laude, Univ. Pisa (Italy)                          |
| 1984-86 | Perfezionamento (PhD school), Neurobiology, Scuola Normale Superiore, Pisa _IT |
| 1986-87 | Postdoctoral fellow, Neurobiology, University of Pittsburgh, USA               |

## **RESEARCH AND PROFESSIONAL EXPERIENCE:**

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| 1988-1990 | Research Staff, Istituto di Neurofisiologia CNR, Pisa Italy                     |
| 1990-2001 | Research staff (Ricercatore), Istituto di Neurofisiologia CNR, Pisa Italy       |
| 2001-2005 | Principal Investigator (Primo Ricercatore), Ist. Neuroscienze CNR, Pisa Italy.  |
| 2005-     | Director of Research (Dirigente di Ricerca), Ist. Neuroscienze CNR, Pisa Italy. |
| 2008-2009 | Interim Director, Ist. Neuroscienze CNR, Pisa Italy.                            |

## **MAIN RESEARCH THEMES**

My research activity has been devoted for many years to the study of the visual system, particularly to the role played by cellular interactions in shaping the neural circuitry during development. In more recent years, I have devoted increasing attention to visual system pathologies in humans, particularly retinal dystrophies.

## **MAIN TECHNIQUES**

Electrophysiology, neuro-anatomy, computational modelling and simulations, live imaging with confocal and time-lapse microscopy, clinical database analysis.

**FINANCIAL SUPPORT** My research has been/is supported over the years by a number of grants, including EC BIO4 CT96 0649, 1996-2000; ISS, 1995; ESF, 1991-1992; Telethon E133, 2001-2003, FIRB Italian Murst 2002-2005, Telethon GGP06031 2006-2009, ASI DMCM project, Institute fur Paraplegia P81, Fondazione Roma - Retinitis Pigmentosa Call 2015-2019.

**REVIEWER** for international journals (Development, J Neurosci., Nature, etc.)

**GRANT REVIEWER** for: European Commission Life Science, Medical Research Council (MRC), Human Science Frontiers Program, Swiss Science Foundation.

## PUBBLICATIONS

1. Galli-Resta, L., et al., *Early detection of central visual function decline in cone-rod dystrophy by the use of macular focal cone electroretinogram*. **Invest Ophthalmol Vis Sci**, 2013. 54(10): p. 6560-9.
2. Falsini, B., et al., *Long-term decline of central cone function in retinitis pigmentosa evaluated by focal electroretinogram*. **Invest Ophthalmol Vis Sci**, 2012. 53(12): p. 7701-9.
3. Restani, L., et al., *Botulinum neurotoxin a impairs neurotransmission following retrograde transynaptic transport*. **Traffic**, 2012. 13(8): p. 1083-9.
4. Rigosi, E., et al., *Loss of retinal capillary vasoconstrictor response to Endothelin-1 following pressure increments in living isolated rat retinas*. **Exp Eye Res**, 2010. 90(1): p. 33-40.
5. Galli-Resta, L. and M.C. Cenni, *Cell death in the mouse retina*, in *Eye, retina, and the visual system of the mouse*, L.M. Chalupa and R. Williams, Editors. 2008, MIT Press: Cambridge, MA. p. 333-342.
6. Galli-Resta, L., et al., *The genesis of retinal architecture: an emerging role for mechanical interactions?* **Prog Retin Eye Res**, 2008. 27(3): p. 260-83.
7. Novelli, E., et al., *A three-dimensional analysis of the development of the horizontal cell mosaic in the rat retina: Implications for the mechanisms controlling pattern formation*. **Vis Neurosci**, 2007. 24(1): p. 91-8.
8. Resta, V., et al., *Acute retinal ganglion cell injury caused by intraocular pressure spikes is mediated by endogenous extracellular ATP*. **Eur J Neurosci**, 2007. 25: p. 2741-2754.
9. Eglén, S.J. and L. Galli-Resta, *Retinal mosaics*, in *Retinal development*, E. Sernagor, et al., Editors. 2006, Cambridge University Press: Cambridge. p. 193-207.
10. Novelli, E., V. Resta, and L. Galli-Resta, *Mechanisms controlling the formation of retinal mosaics*. **Prog Brain Res**, 2005. 147: p. 141-53.
11. Resta, V., et al., *Neuronal death induced by endogenous extracellular ATP in retinal cholinergic neuron density control*. **Development**, 2005. 132(12): p. 2873-82.
12. Eglén, S.J., L. Galli-Resta, and B.E. Reese, *Theoretical models of retinal mosaic formation*, in *Modelling neuronal development*, A. van Ooyen, Editor. 2003, MIT press.: Cambridge, MA, USA.
13. Rossi, C., E. Strettoi, and L. Galli-Resta, *The spatial order of horizontal cells is not affected by massive alterations in the organization of other retinal cells*. **J Neurosci**, 2003. 23(30): p. 9924-8.
14. Galli-Resta, L., *Putting neurons in the right places: local interactions in the genesis of retinal architecture*. **Trends Neurosci**, 2002. 25(12): p. 638-43.
15. Galli-Resta, L., E. Novelli, and A. Viegi, *Dynamic microtubule-dependent interactions position homotypic neurones in regular monolayered arrays during retinal development*. **Development**, 2002. 129(16): p. 3803-14.
16. Previti, A., et al., *A free-standing hydrostatic bioreactor for neural tissue culture*. **IEEE-EMBS Transactions**. Special Topic conference on Molecular, Cellular and Tissue Engineering, 2002. 1: p. 157-158.

17. Reese, B.E. and L. Galli-Resta, *The role of tangential dispersion in retinal mosaic formation*. **Prog Retin Eye Res**, 2002. 21(2): p. 153-68.
18. Galli-Resta, L., *Assembling the vertebrate retina: global patterning from short-range cellular interactions*. **Neuroreport**, 2001. 12: p. A103-A106.
19. Galli-Resta, L., *Wiring the vertebrate retina: global patterning from short range cellular interactions*. Memories of ONRFO and DARPA meeting on electroactive polymers and biosystems. Il ciocco 2001, 2001.
20. Cellerino, A., L. Galli-Resta, and L. Colombaioni, *The dynamics of neuronal death: a time-lapse study in the retina*. **J Neurosci.**, 2000. 20: p. RC92.
21. Cellerino, A., E. Novelli, and L. Galli-Resta, *Retinal ganglion cells with NADPH-diaphorase activity in the chick form a regular mosaic with a strong dorso-ventral asymmetry that can be modelled by a minimal spacing rule*. **Eur. J. Neurosci**, 2000. 12: p. 613-620.
22. Galli-Resta, L., *Local, possibly contact-mediated signalling restricted to homotypic neurons controls the regular spacing of cells within the cholinergic arrays in the developing rodent retina*. **Development**, 2000. 127: p. 1499-1508.
23. Galli-Resta, L. and E. Novelli, *The effects of naturally occurring cell loss on the regularity of the retinal cholinergic arrays*. **J. Neurosci.**, 2000. 20: p. rc60 (1-5).
24. Galli-Resta, L., et al., *The spatial organization of the cholinergic mosaics in the adult mouse retina*. **Eur J Neurosci**, 2000. 21(3819-3822).
25. Galli-Resta, L., *This passion of our kind*. **Nature**, 1999. 399: p. 745-746.
26. Galli-Resta, L., et al., *Modelling the Mosaic Organization of Rod and Cone Photoreceptors with a Minimal Spacing Rule*. **Eur. J. Neurosci.**, 1999. 11: p. 1438-1446.
27. Galli-Resta, L., *Patterning the vertebrate retina: the early assembly of retinal mosaics*. **Seminars Cell Develop Biol**, 1998. 9: p. 279-284.
28. Kryger, Z., et al., *The Topography of Rod and Cone Photoreceptors in the Retina of the Ground Squirrel*. **Visual Neurosci.**, 1998. 15: p. 685-691.
29. Galli-Resta, L., et al., *Mosaics of Islet-1 expressing amacrine cells assembled by short range cellular interactions*. **J Neurosci**, 1997. 17: p. 7831-7838.
30. Galli-Resta, L. and M. Ensini, *An intrinsic limit between genesis and death of individual neurons in the developing retinal ganglion cell layer*. **J. Neurosci**, 1996. 16: p. 2318-2324.
31. Galli-Resta, L. and G. Resta, *Not so humane*. **Nature**, 1994. 377: p. 91.
32. Galli-Resta, L., et al., *Afferent spontaneous activity promotes survival of target cells in the developing retinotectal system of the rat*. **J. Neurosci.**, 1993. 13: p. 243-250.
33. Galli-Resta, L. and G. Resta, *A quantitative model for the regulation of naturally occurring cell death in the developing vertebrate nervous system*. **J. Neurosci**, 1992. 12: p. 4586-4594.
34. Radel, J.D., L. Galli-Resta, and R.D. Lund, *Plasticity in innervation of the rat superior colliculus by transplanted retinae as a result of eye removal at maturity*. **Exp Neurol**, 1991. 112(3): p. 252-63.
35. Gravina, A., et al., *Transplant of embryonal nervous tissue preserves the responses of rat retinal ganglion cells after section of the optic nerve*. **Exp Brain Res**, 1990. 80(3): p. 631-4.
36. Maffei, L. and L. Galli-Resta, *Correlation in the discharges of neighboring rat retinal ganglion cells during prenatal life*. **Proc. Natl. Acad. Sci. U.S.A.**, 1990. 87(7): p. 2861-4.

37. Galli, L., K. Rao, and R.D. Lund, *Transplanted rat retinae do not project in a topographic fashion on the host tectum*. **Exp Brain Res**, 1989. 74(2): p. 427-30.
38. Galli, L., et al., *The organization of receptive fields in area 18 neurones of the cat varies with the spatio-temporal characteristics of the visual stimulus*. **Exp Brain Res**, 1988. 71(1): p. 1-7.
39. Galli, L. and L. Maffei, *Spontaneous impulse activity of rat retinal ganglion cells in prenatal life*. **Science**, 1988. 242: p. 90-91.
40. Lund, R.D., et al., *Retinal transplants and plasticity of the primary optic projections in rodents.*, in *Neural plasticity: A lifespan approach.*, T.L. Petit and G.P. Ivy, Editors. 1988, A. Liss: New York,. p. 1-19.
41. Berardi, N., et al., *Binocular suppression in cortical neurons*. **Exp Brain Res**, 1986. 63(3): p. 581-4.
42. Bisti, S., et al., *Spatial-frequency characteristics of neurones of area 18 in the cat: dependence on the velocity of the visual stimulus*. **J Physiol**, 1985. 359: p. 259-68.