

**Robert A. Linsenmeier**  
**Publications - as of July 2023**

***Publications in refereed journals***

1. Linsenmeier, R.A. and Jakielka, H.G. (1979) Non-linear spatial summation in cat retinal ganglion cells at different background levels. *Exp. Brain Res.* 36: 301-309.
2. Linsenmeier, R.A. and Hertz, B.G. (1979) Eye movements in paralyzed cats induced by drugs and sympathetic stimulation. *Vision Res.* 19: 1249-1252.
3. Enroth-Cugell, C., Goldstick, T.K., Linsenmeier, R.A. (1980) The contrast sensitivity of cat retinal ganglion cells at reduced oxygen tensions. *J. Physiol.* 304: 59-81.
4. Linsenmeier, R.A., Goldstick, T.K., Blum, R.S. and Enroth-Cugell, C. (1981) Estimation of retinal oxygen transients from measurements made in the vitreous humor. *Exp. Eye Res.* 32: 369-379.
5. Frishman, L.J. and Linsenmeier, R.A., (1982) Effects of picrotoxin and strychnine on non-linear responses of Y-type cat retinal ganglion cells. *J. Physiol.* 324: 347-363.
6. Linsenmeier, R.A., Frishman, L.J., Jakielka, H.J. and Enroth-Cugell, C. (1982) Receptive field properties of X and Y cells in the cat retina derived from contrast sensitivity measurements. *Vision Res.* 22: 1173-1183.
7. Linsenmeier, R.A. and Steinberg, R.H. (1982) Origin and sensitivity of the light peak in the intact cat eye. *J. Physiol.* 331: 653-673.
8. Linsenmeier, R.A., Mines, A.H. and Steinberg, R.H. (1983) Effects of hypoxia and hypercapnia on the light peak and electroretinogram of the cat. *Invest. Ophthalmol. Visual Sci.* 24: 37-46.
9. Linsenmeier, R.A. and Steinberg, R.H. (1983) A light evoked interaction of apical and basal membranes of the retinal pigment epithelium: the c-wave and the light peak. *J. Neurophysiol.* 50: 136-147.
10. Steinberg, R.H., Linsenmeier, R.A. and Griff, E.R. (1983) Three light-evoked responses of the retinal pigment epithelium. *Vision Res.* 23: 1315-1323.
11. Linsenmeier, R.A. and Steinberg, R.H. (1984) Delayed basal hyperpolarization of the cat retinal pigment epithelium, and its relation to the fast oscillation of the DC ERG. *J. Gen. Physiol.* 83: 213-232.
12. Linsenmeier, R.A. and Steinberg, R.H. (1984) Effects of hypoxia on K<sup>+</sup> homeostasis and pigment epithelial cells in the cat retina. *J. Gen. Physiol.* 84: 945-970.
13. Steinberg, R.H., Linsenmeier, R.A. and Griff, E.R. (1985) Retinal pigment epithelial cell contributions to the electroretinogram and electrooculogram. *Progress in Retinal Research.* Vol. 4, ed. Osborne, N. and Chader, G. Oxford: Pergamon Press, pp. 33-66.
14. Linsenmeier, R.A. and Steinberg, R.H. (1986) Mechanisms of hypoxic effects on the cat DC electroretinogram. *Invest. Ophthalmol. Visual Sci.* 27: 1386-1394.
15. Linsenmeier, R.A. (1986) Effects of light and darkness on oxygen distribution and consumption in the intact cat retina. *J. Gen. Physiol.* 88: 521-542.
16. Linsenmeier, R.A. and Steinberg, R.H. (1987) Mechanisms of azide induced increases in the c-wave and standing potential of the intact cat eye. *Vision Research* 27: 1-8.
17. Linsenmeier, R.A., Smith, V.C. and Pokorny, J. (1987) The light rise of the electrooculogram during hypoxia. *Clinical Vision Sciences* 2: 111-116.
18. Linsenmeier, R.A. and Yancey, C.M. (1987) Improved fabrication of double-barreled recessed cathode oxygen microelectrodes. *J. Appl. Physiol.* 63: 2554-7.
19. Yancey, C.M. and Linsenmeier, R.A. (1988) The electroretinogram and choroidal PO<sub>2</sub> in the cat during elevated intraocular pressure. *Invest. Ophthalmol. Visual Sci.* 29: 700-707.
20. Linsenmeier, R.A. and Yancey, C.M. (1989) Effects of hyperoxia on oxygen distribution in the intact cat retina. *Invest. Ophthalmol. Vis. Sci.* 30: 612-618.
21. Yancey, C.M. and Linsenmeier, R.A. (1989) Oxygen distribution and consumption in the cat retina at elevated intraocular pressure. *Invest. Ophthalmol. Vis. Sci.* 30: 600-611.
22. Chen, E. P.-C. and Linsenmeier, R.A. (1989) Effects of 2-amino-4-phosphonobutyric acid on responsivity and spatial summation of X cells in the cat retina. *J. Physiol.* 419: 59-75.
23. Chen, E. P.-C. and Linsenmeier, R.A. (1989) Center components of cone-driven cat retinal ganglion cells: differential sensitivity to 2-Amino-4-phosphonobutyric acid. *J. Physiol.* 419: 77- 93.
24. Haugh, L.M., Linsenmeier, R.A. and Goldstick, T.K. (1990) Mathematical models of the spatial distribution of retinal oxygen tension and consumption, including changes upon illumination. *Annals of Biomedical Engineering* 18: 19-36.

25. Linsenmeier, R.A. (1990) Electrophysiological consequences of retinal hypoxia. *Graefes Archive for Clinical and Experimental Ophthalmology* 228: 143-150
26. Linsenmeier, R.A. and Braun, R.D. (1992) Oxygen distribution and consumption in the cat retina during normoxia and hypoxemia. *J. Gen. Physiol.* 99: 177-197.
27. Braun, R.D., Goldstick, T.K., and Linsenmeier, R.A. (1992) New perfluorocarbon emulsion improves tissue oxygenation in cat retina. *J. Appl. Physiol.* 72: 1960-1968.
28. Braun, R.D., Linsenmeier, R.A. and Yancey, C.M. (1992) Spontaneous fluctuations in oxygen tension in the cat retina. *Microvascular Res.* 44: 73-84.
29. Ahmed, J., Braun, R.D., Dunn, R. and Linsenmeier, R.A. (1993) Oxygen distribution in the macaque retina. *Invest. Ophthalmol. Visual Sci.* 34: 516-521.
30. Rimmer, T.J. and Linsenmeier, R.A. (1993) Resistance of the diabetic rat ERG to hypoxemia. *Invest. Ophthalmol. Visual Sci.* 34: 3246-3252.
31. Ahmed, J., Linsenmeier, R.A. and Dunn, R. (1994) The oxygen distribution in the prelaminar optic nerve head of the cat. *Exp. Eye Research* 59: 457-466.
32. Braun, R.D. and Linsenmeier, R.A. (1995) Retinal oxygen tension and the electroretinogram during retinal artery occlusion in the cat. *Invest. Ophthalmol. Visual Sci.* 36: 523-541.
33. Braun, R.D., Linsenmeier, R.A. and Goldstick, T.K. (1995) Oxygen consumption in the inner and outer retina of the cat. *Invest. Ophthalmol. Visual Sci.* 36: 542-554.
34. Haugh-Scheidt, L.M., Linsenmeier, R.A. and Griff, E.R. (1995) Oxygen consumption in the isolated toad retina. *Exp. Eye Res.* 61: 63-72.
35. Haugh-Scheidt, L.M., Griff, E.R., and Linsenmeier, R.A. (1995) Light-evoked oxygen responses in the isolated toad retina. *Exp. Eye Res.* 61: 73-81.
36. McRiley, M.A. and Linsenmeier, R.A. (1996) Fabrication of a glucose oxidase recessed microelectrode for the amperometric determination of glucose. *J. Electroanal. Chem.* 414: 235-246.
37. Neely, K.A., Ernest, J.T., Goldstick, T.K., Linsenmeier, R.A. and Moss, J. (1996) Isovolemic hemodilution increases retinal tissue oxygen tension. *Graefe's Arch. for Clinical and Experimental Ophthalmology* 234: 688-694.
38. McRiley, M.A., Ahmed, J., Chen, E. P.-C., and Linsenmeier, R.A. (1997) Effects of adaptation level and hypoglycemia on function of the cat retina during hypoxemia. *Visual Neuroscience* 14: 339-350.
39. Linsenmeier, R. A., Braun, R.D., McRiley, M.A., Padnick, L.B., Ahmed, J., Hatchell, D.L., McLeod, D.S. and Lutty, G.A. (1998) Retinal hypoxia in long term diabetic cats. *Invest Ophthalmol Vis Sci* 39: 1647-1657.
40. Padnick, L.B., Linsenmeier, R.A. and Goldstick, T.K. (1999) Oxygenation of the cat primary visual cortex. *J. Applied Physiol.* 86: 1490-1496
41. Padnick, L.B., Linsenmeier, R.A. and Goldstick, T.K. (1999) Perfluorocarbon emulsion improves oxygenation of the cat primary visual cortex. *J. Applied Physiol.* 86: 1497-1504.
42. Padnick, L.B. and Linsenmeier, R.A. (1999) Properties of the flash visual evoked potential in the cat primary visual cortex. *Vision Research* 39: 2983-2840
43. Linsenmeier, R.A. and Padnick-Silver, L. (2000) Metabolic dependence of photoreceptors on the choroid in the normal and detached retina. *Invest Ophthalmol Vis Sci.* 41: 3117-3123.
44. Kang Derwent, J. and Linsenmeier, R.A. (2000) Effects of hypoxemia on the a- and b-waves of the electroretinogram in the intact cat retina. *Invest Ophthalmol Vis Sci.* 41: 3634- 3642.
45. Kang Derwent, J. and Linsenmeier, R.A. (2001) Intraretinal analysis of the a-wave of the electroretinogram in the dark-adapted intact cat retina. *Visual Neuroscience* 18: 353-363.
46. Ahmed, J., Pulfer, M. and Linsenmeier, R.A. (2001) Measurement of blood flow through the retinal circulation of the cat during normoxia and hypoxemia using fluorescent microspheres. *Microvascular Research* 62: 143-153.
47. Kang Derwent, J. and Linsenmeier, R.A. (2001) Hypoglycemia increases the sensitivity of the cat retina to hypoxemia. *Visual Neuroscience* 18: 983-993.
48. Hoang, Q.V., Linsenmeier, R.A., Chung, C.K., and Curcio, C.A. (2002) Photoreceptor inner segments in monkey and human retina: mitochondrial density, optics and regional variation. *Visual Neuroscience*, 19: 395-407.
49. Padnick-Silver, L and Linsenmeier, R.A. (2002) Quantification of in vivo anaerobic metabolism in the normal cat retina through pH measurements. *Visual Neuroscience*, 19: 793-806.
50. Padnick-Silver, L and Linsenmeier, R.A. (2003) Effect of acute hyperglycemia on oxygen and oxidative metabolism in the intact cat retina. *Invest. Ophthalmol. Visual Sci.* 44: 745-750.

51. Wangsa-Wirawan, N. and Linsenmeier, R.A. (2003) Retinal oxygen: fundamental and clinical aspects. *Archives of Ophthalmology*, 121: 547-557.
52. Linsenmeier, R.A.. (2003) What makes a biomedical engineer? *IEEE Engineering in Medicine and Biology Magazine*, 22(4): 32-38.
53. Troy, J.B. and Linsenmeier, R.A. (2003) Optimizing the delivery of content in physiology education. *IEEE Engineering in Medicine and Biology Magazine*, 22(4): 80-87.
54. Birol, G., Budzynski, E., Wangsa-Wirawan, N., and Linsenmeier, R.A. (2004) Hyperoxia promotes electroretinogram recovery following retinal artery occlusion in cat. *Invest. Ophthal. Visual Sci.* 45: 3690-3696
55. Birol, G.B., Budzynski, E., Wangsa-Wirawan, N.D., and Linsenmeier, R.A. (2005) Retinal arterial occlusion leads to acidosis in the cat. *Exp. Eye Res.* 80 (4): 527-533 2005
56. Budzynski, E., Padnick-Silver, L., Wangsa-Wirawan, N.D., Hatchell, D.L., and Linsenmeier, R.A. (2005) Intraretinal pH distribution in diabetic cats, *Current Eye Research* 30: 229-240.
57. Padnick-Silver, L and Linsenmeier, R.A. (2005) Effect of hypoxemia and hyperglycemia on pH and anaerobic metabolism in the intact cat retina. *Archives of Ophthalmology* 123:1684-1690.
58. Kolikant, Y.B-D., Gatchell, D.W., Hirsch, P.L. and Linsenmeier, R.A. (2006) A Cognitive-Apprenticeship-Inspired Instructional Approach for Teaching Scientific Writing and Reading, *J College Science Teaching* 36 (3): 20-25.
59. Kang Derwent, J.J., Padnick-Silver, L., McRipley, M., Giuliano, E., Linsenmeier, R.A. and Narfström, K. (2006). The electroretinogram (ERG) components in Abyssinian cats with hereditary retinal degeneration, *Invest. Ophthalmol. Visual Sci.*, 47: 3673-3682.
60. Padnick-Silver, L., Kang Derwent, J.J., Giuliano, E.Narfström, K.N., and Linsenmeier, R.A. (2006) Retinal oxygenation and oxygen metabolism in Abyssinian cats with a hereditary retinal degeneration, *Invest. Ophthalmol. Visual Sci.*, 47: 3683-3689.
61. Wang, S. and Linsenmeier, R.A. (2007) Hyperoxia improves oxidative metabolism in the detached feline retina. *Invest. Ophthalmol. Visual Sci.* 48: 1335-1341.
62. Chung, C.K, and Linsenmeier, R.A. (2007) Effect of carbogen (95% O<sub>2</sub>/5% CO<sub>2</sub>) on retinal oxygenation in dark-adapted anesthetized cats. *Current Eye Research* 32: 699-707
63. Birol, G., Wang, S., Budzynski, E. Wangsa-Wirawan, N.D., and Linsenmeier, R.A. (2007) Oxygen distribution and consumption in the macaque retina. *Am J Physiol Heart Circ Physiol* 293: H1696-H1704.
64. Budzynski, E., Smith, J., Birol, G., Bryar, P., and Linsenmeier, R.A. (2008) Chronic effects of photocoagulation on PO<sub>2</sub> in the cat retina. *Invest. Ophthalmol. Visual Sci.*, 49: 380-389
65. Linsenmeier, R.A., Kanter, D.E., Smith, H.D., Linsenmeier, K.A. and McKenna A.. (2008) Evaluation of a Challenge-Based Human Metabolism Laboratory for Undergraduates. *Journal of Engineering Education*, 97(2): 213-222.
66. Crosson, L., Kroes, R.A., Moskal, J.R., Linsenmeier, R.A. (2009) Gene expression patterns in normoxic, hypoxic and post-hypoxic adult rat retina with special reference to the NMDA receptor and its interactome. *Molecular Vision* 15: 296-311. PMCID: PMC2635851
67. Landsberg, L, Young, J.B., Leonard, W.R., Linsenmeier, R.A., Turek, F.W. (2009) Is obesity associated with lower body temperature? Core temperature: a forgotten variable in energy balance. *Metabolism Clinical and Experimental* 58: 871-876.
68. Wang, S., Birol, G., Budzynski, E., Flynn, R. and Linsenmeier, R.A. (2010) Metabolic responses to light in monkey photoreceptors, *Current Eye Research* 35(6): 510-518. PMCID: PMC2989412
69. Lee, C.J., Smith, J.H., Kang-Mieler, J.J., Budzynski, E. and Linsenmeier, R.A. (2011) Decreased circulation in the feline choriocapillaris underlying retinal photocoagulation lesions. *Investigative Ophthalmology and Visual Science*. 52:3398-3403. PMCID: PMC3109035
70. Hoffmann, M.E., Rodriguez, S.M., Zeiss, D.M., Wachsberg, K.N., Kushner, R.F., Landsberg, L., and Linsenmeier, R.A. (2012) 24-Hour Core Temperature in Obese and Lean Men and Women, *Obesity* 20 (8): 1585-1590 doi: 10.1038/oby.2011.380.
71. Lau, J.C.M. and Linsenmeier, R.A. (2012) Oxygen distribution and consumption in the Long-Evans rat retina. *Exp. Eye Research* 102: 50-58
72. Aksenov, D., Eassa, J.E., Lakhoo, J., Wyrwicz, A. and Linsenmeier, R.A. (2012) Effect of isoflurane on brain tissue oxygen tension and cerebral autoregulation in rabbits. *Neuroscience Letters* 524(2): 116-118.

73. College of Fellows of American Institute for Medical and Biological Engineering (R.A. Linsenmeier, principal author) (2013) Medical and biological engineering in the next 20 years: the promise and the challenges. *IEEE Transactions on Biomedical Engineering* 60(7): 1767-1775.
74. Lau, J.C.M., Kroes, R., Moskal, J., and Linsenmeier, R.A. (2013) Diabetes Changes Expression of Genes Related to Glutamate Neurotransmission and Transport in the Long-Evans Rat Retina. *Molecular Vision*, 19:1538-1553. PMCID: PMC3716414
75. Lau, J.C.M. and Linsenmeier, R.A. (2014) Increased intraretinal PO<sub>2</sub> in short term diabetic rats. (2014) *Diabetes*, 63(12):4338-4342. PMCID: PMC4238003
76. Song, W., Wei, Q., Liu, W., Liu, T., Yi, J., Sheibani, N., Fawzi, A.A., Linsenmeier, R.A., Shuliang, J. and Zhang, H.F. (2014) A combined method to quantify retinal metabolic rate of oxygen using photoacoustic ophthalmoscopy and optical coherence tomography, *Scientific Reports*, Oct 6; 4:6525. doi: 10.1038/srep06525. PMCID: PMC4185377
77. Yi, J., Liu, W., Chen, S., Backman, V., Sheibani, N., Sorenson, C.M., Fawzi, A.A., Linsenmeier, R.A., and Zhang, H.F. (2015) Visible light optical coherence tomography measures retinal oxygen metabolic response to systemic oxygenation. *Light – Science and Applications*. 4:e334; doi:10.1038/lسا.2015.107.
78. Scarinci, F., Jampol, L., Linsenmeier, R.A. and Fawzi, A. (2015) Diabetic macular ischemia is associated with outer retinal disruption on optical coherence tomography, *JAMA Ophthalmology* (formerly Arch Ophth). 33(9):1036-44. PMID: 26158562. PMCID: PMC4651916
79. Werkmeister, R.M., Schmidl, D., Aschinger, G., Doblhoff-Dier, V., Palkovits, S., Wirth, M., Garhofer, G., Linsenmeier, R.A., Leitgeb, R.A. and Schmetterer, L. (2015) Retinal oxygen extraction in humans. *Scientific Reports*, Oct 27; 5:15763. doi: 10.1038/srep15763. PMCID: PMC4621499
80. Baiduc, R.R., Linsenmeier, R.A., and Ruggeri, N. (2016) Mentored Discussions of Teaching: An Introductory Teaching Development Program for Future STEM Faculty. *Innovative Higher Education* 41:237-254.
81. Liu, W., Li, H., Shah, R.S., Shu, X., Linsenmeier, R.A., Fawzi, A.A., and Zhang, H.F. (2015) Simultaneous optical coherence tomography angiography and fluorescein angiography in rodents with normal retina and laser-induced choroidal neovascularization. *Optics Letters*, 40(24):5782-5. doi: 10.1364/OL.40.005782.
82. Dmitriev, A.V., Henderson, D., and Linsenmeier, R.A. (2016) Light-induced pH changes in the intact retinae of normal and early diabetic rats, *Experimental Eye Research*, 145: 148-157 doi: 10.1016/j.exer.2015.11.015. PMCID: PMC4842083.
83. Linsenmeier, R.A., Aksенов, D.P., Faber, H.M., Makar, P. and Wyrwicz, A.M. (2016) Spontaneous Fluctuations of PO<sub>2</sub> in the Rabbit Somatosensory Cortex. Chapter 39 in Elwell, C.E., Leung, T.S., Harrison, D.K. editors, *Oxygen Transport to Tissue XXXVII*. *Adv Exp Med Biol*. 876:311-317. doi: 10.1007/978-1-4939-3023-4\_39
84. Dmitriev, A.V., Henderson, D., and Linsenmeier, R.A. (2016) Development of diabetes-induced acidosis in the rat retina. *Experimental Eye Research* 149:16-25.
85. Liu, W., Wang, S., Soetikno, B.T., Yi, J., Zhang, K., Chen, S., Linsenmeier, R.A., Sorensen, C.M., Sheibani, N., and Zhang, H.F. (2017) Increased retinal oxygen metabolism precedes microvascular alterations in Type 1 diabetic mice. *Invest. Ophthalmol. Visual Sci.* 58:981-989,
86. Linsenmeier, R.A. and Zhang, H.F. (2017) Retinal Oxygen: From Animals to Humans. *Progress in Retinal and Eye Research* 58:115-151. PMCID: PMC5441959
87. Dreffs, A., Henderson, D., Dmitriev, A.V., David A. Antonetti, D.A., and Linsenmeier, R.A. (2018) Retinal pH and acid regulation during metabolic acidosis. *Current Eye Research*, 43:902-912.
88. Aksenov, D., Dmitriev, A.V., Miller, M., Linsenmeier, R.A., and Wyrwicz, A.M. (2018) Brain tissue oxygen regulation in awake and anesthetized neonates. *Neuropharmacology*. 135: 368-375.
89. Dmitriev, A.V., Henderson, D. and Linsenmeier, R.A. (2019) Diabetes alters pH control in the rat retina. *Invest. Ophthalmol. Visual Sci.* 60: 723-730.
90. Dmitriev, A.V., Dmitriev, A.A., and Linsenmeier, R.A. (2019) The logic of ionic homeostasis: cations are for voltage, but not for volume. *PLOS Computational Biology* 15(3): e1006894. <https://doi.org/10.1371/journal.pcbi.1006894>.
91. Fawzi, A.A., Fayed, A.E., Linsenmeier, R.A., Gao, J., Yu, F. (2019) Improved macular capillary flow on optical coherence tomography angiography after panretinal photocoagulation for diabetic retinopathy. *Am. J. Ophthalmology*. 206: 217-227.

92. Palochak, C.M.A., Lee, H.E., Song, J., Geng, A., Linsenmeier, R.A., Burns, S.A., and Fawzi, A.A. (2019) Retinal Blood Velocity and Flow in Early Diabetes and Diabetic Retinopathy Using Adaptive Optics Scanning Laser Ophthalmoscopy. *J. Clinical Medicine*, 8: 1165.  
<http://dx.doi.org/10.3390/jcm8081165>.
93. Kubota, R., Calkins, D.J., Henry, S.H. and Linsenmeier, R.A. (2019) Emixustat reduces metabolic demand of dark activity in the retina. *Invest. Ophthalmol. Visual Sci.* 60: 4924-4930.
94. Sharma, S.B., Ifergan, I., Linsenmeier, R.A., Xu, D., Cooper, J.G., Miller, S.D. and Kessler, J. (2020) Intravenous immunomodulatory nanoparticle treatment for traumatic brain injury *Annals of Neurology*, 87(3):442-455
95. White JA, Gaver DP, Butera RJ Jr, Choi B, Dunlop MJ, Grande-Allen KJ, Grosberg A, Hitchcock RW, Huang-Saad AY, Kotche M, Kyle AM, Lerner AL, Linehan JH, Linsenmeier RA, Miller MI, Papin JA, Setton L, Sgro A, Smith ML, Zaman M, Lee AP. (2020) Core competencies for undergraduates in bioengineering and biomedical engineering: findings, consequences, and recommendations. *Ann Biomed Eng.* 48(3):905-912
96. Linsenmeier, R.A. and Saterbak, A. (2020) Fifty years of undergraduate biomedical engineering education. *Ann Biomed Eng.* 48 (6): 1590-1615. DOI: 10.1007/s10439-020-02494-0
97. Linsenmeier, R.A., Beckmann, L. and Dmitriev, A.V. (2020) Intravenous ketamine for long term anesthesia in rats. *Heliyon* 6: e05686.
98. Dmitriev, A.V., Dmitriev, A.A., and Linsenmeier, R.A. (2021) K<sup>+</sup>-dependent Müller cell-generated components of the electroretinogram. *Visual Neuroscience*, 38: E010.  
<https://doi.org/10.1017/S0952523821000092>
99. Dmitriev, A.V., Dmitriev, A.A., and Linsenmeier, R.A. (2022) Extracellular K<sup>+</sup> reflects light-evoked changes in retinal energy metabolism. *Exp. Eye Research*, Volume 221, August 2022, 109133.  
<https://doi.org/10.1016/j.exer.2022.109133>
100. Aksnov, D.P., Doubovnikov, E.D., Serdyukova, N.A., Gascoigne, D.A., Linsenmeier, R.A., Drobyshevsky, A. (2022) Brain tissue oxygen dynamics while mimicking the functional deficiency of interneurons. *Frontiers in Cellular Neuroscience*. 20 October 2022. Sec. Cellular Neurophysiology  
<https://doi.org/10.3389/fncel.2022.983298>
101. Aksnov, D.P., Doubovnikov, E.D., Serdyukova, N.A., Gascoigne, D.A. , Li, L., Linsenmeier, R.A. Drobyshevsky, A. (20xx) Brain tissue oxygen and BOLD fMRI under different levels of neuronal activity. *Oxygen Transport to Tissue XLV (?)*. *Adv Exp Med Biol.* In press
102. Dmitriev, A.V. and Linsenmeier, R.A. (2023) The internal impermeant anion, its mean valence and osmolarity-charge asymmetry. *Paracelsus Proceedings of Experimental Medicine* 2(S1): 1-12
103. Linsenmeier, R.A., Dmitriev, A.V., Dmitriev, A.A. (2023) Oxygen profiles and oxygen consumption in the isolated mouse retina. *Exp. Eye Research*, Volume 233, 109554.  
<https://doi.org/10.1016/j.exer.2023.109554>
104. Dmitriev, A.V., Dmitriev, A.A. and Linsenmeier, R.A. (2023) Diabetes-induced changes of the rat ERG in relation to hyperglycemia and acidosis. *Current Eye Research*.

### **Book Chapters**

1. Linsenmeier, R.A., Yancey, C.M. and Ebert, W.W. (1988) The electroretinogram of the horseshoe crab, *Limulus polyphemus*: a laboratory exercise in sensory physiology. In *Tested Studies for Laboratory Teaching: Proceedings of the Association for Biology Laboratory Education*, R. Peifer, ed., Assn. for Biology Laboratory Education. pp. 101-130.
2. Enroth-Cugell, C., Mockros, L.F. and Linsenmeier, R.A. (2001) Biomedical Engineering at Northwestern 1969-1999. In *Tech Anthology II*, ed. Fine, M.E. and Seniw, M.E. Evanston, IL: McCormick School of Engineering and Applied Science. Pp. 97-106.
3. Collins, J.C., Harris, A., Linsenmeier, R.A., and Olds, S. (2005) Testing hypotheses of learning at the VaNTH bioengineering Education Center: applications to nutrition and metabolism. Chapter 14 in *Mathematical Modeling in Nutrition and Toxicology*, J.L. Hargrove, and C.D. Berdanier, eds. Athens, GA: Mathematical Biology Press. Pp. 235-244.
4. Linsenmeier, R.A.. (2005) Retinal Bioengineering, Chapter 13 of *Neural Engineering*, ed. B. He. New York: Kluwer Academic, pp. 421-484.
5. Linsenmeier, R.A. and Ellington, R. (2007) Visual Sensory Physiology. In O'Donnell, M, ed., *Tested Studies for Laboratory Teaching*. Volume 28, 8 pp. (Proceedings, Association for Biology Laboratory Education, Pudue University, June, 2006).

6. Linsenmeier, R.A. and Gatchell, D.W. (2008) What makes a bioengineer and a biotechnologist? Chapter 1 in *Career Development in Bioengineering and Biotechnology*, ed. Madhavan, G, Oakley, B and Kun, L. New York: Springer, pp. 3-20.
7. Linsenmeier, R.A. and Pournaras, C.J. (2008) Consommation et diffusion de l'oxygene retinien. Section 5.3.3 of *Pathologies Vasculaires Oculaires*, ed. Pournaras CJ. Paris: Masson, pp. 99-107
8. Linsenmeier, R.A. (2010) Retinal Energy Metabolism. Chapter 73 of *Ocular Disease: Mechanisms and Management*. Levin, L.A. and Albert, D.M, eds. Oxford, UK: Saunders/Elsevier pp. 572-578
9. Linsenmeier, R.A. (2012) Oxygen Measurements in Animals. Chapter 4 of *Ocular Blood Flow*, eds. L. Schmetterer and J.W. Kiel. Berlin Heidelberg: Springer-Verlag, pp 65-93.
10. Linsenmeier, R.A. and Troy, J.B (2013) Retinal Bioengineering, Chapter 14 of *Neural Engineering, 2<sup>nd</sup> Edition*, ed. B. He. New York: Springer.
11. Linsenmeier, R.A., Cole, J.Y. and Glucksberg, M.R. (2014) Some cognitive issues in engineering design. Chapter 10 of *Integrating Cognitive Science with Innovative Teaching in STEM Disciplines*, eds. M.A. McDaniel, R.F. Frey, S.M. Fitzpatrick, and H.L. Roediger, St. Louis, MO: Washington University Libraries. E-book available from Amazon.com. PDF of book available upon request.
12. Linsenmeier, R.A. and Troy, J.B (2020) Retinal Bioengineering, in *Neural Engineering, 3<sup>rd</sup> Edition*, ed. B. He. New York: Springer

### **Refereed Conference Proceedings**

1. Linsenmeier, R.A. and Steinberg, R.H. (1983) Variations of c-wave amplitude in the cat eye. Documenta Ophthalmologica Proceedings Series 37: 21-28.
2. Griff, E.R., Linsenmeier, R.A. and Steinberg, R.H. (1983) The cellular origin of the fast oscillation. Doc. Ophthalmol. Proc. Ser. 37: 13-20.
3. Steinberg, R.H., Griff, E.R. and Linsenmeier, R.A. (1983) The cellular origin of the light peak. Doc. Ophthalmol. Proc. Series 37: 1-11.
4. Linsenmeier, R.A., Goldstick, T.K. and Zhang, S.-L. (1989) Chinese herbal medicine increases tissue oxygen tension. Advances in Experimental Medicine and Biology, 247: 795-801.
5. Roh, H.D., Linsenmeier, R.A. and Goldstick, T.K. (1990) Spatial variation of the local tissue oxygen diffusion coefficient measured in situ in the cat retina and cornea. Adv. Exp. Med. Biol. 277: 127-136.
6. Harris, T.R., Linsenmeier, R.A., Diller, K.R. and Gray, M. (1999) A plan for a multi-institutional consortium in bioengineering education. Proceedings of The First Joint BMES/EMBS Conference: Serving Humanity, Advancing Technology. Oct 13-16, 1999, Atlanta, GA, p. 1243
7. Kanter, D.E., Smith, H.D., McKenna, A., Rieger, C, and Linsenmeier, R.A. (2003) Inquiry-based laboratory instruction throws out the cookbook and improves learning. Proceedings of the American Society for Engineering Education Annual Conference and Exposition, June, 2003. Nashville TN, 12 pp. [www.asee.org](http://www.asee.org)
8. Gatchell, D.W., Linsenmeier, R.A. and Harris, T.R. (2004) Biomedical engineering key content survey – the First step in a Delphi study to determine the core undergraduate BME curriculum. Proceedings of the American Society for Engineering Education Annual Conference and Exposition, June, 2004. Salt Lake City, UT, 5 pp. [www.asee.org](http://www.asee.org)
9. Gatchell, D.W. and Linsenmeier, R.A. (2005) Undergraduate Biomedical Engineering Curricula – Recommendations from Academia and Industry. Proceedings of the Tenth Institute of Biological Engineering Meeting, Athens, GA, 2005.
10. Linsenmeier, R.A. and Gatchell, D.W. (2006) Core Elements of an Undergraduate Biomedical Engineering Curriculum – State of the Art and Recommendations. Proceedings, 9<sup>th</sup> International Conference on Engineering Education, San Juan, Puerto Rico.
11. Linsenmeier, R.A., Olds, S.A. and Kolikant, Y. B.-D. (2006) Instructor and Course Changes Resulting from an HPL-inspired Use of Personal Response Systems. Proceedings, 36<sup>th</sup> ASEE/IEEE Frontiers in Education Conference. October 28 – 31, 2006, San Diego, CA. 6 pp.
12. Linsenmeier, R.A. and Ellington, R. (2007) Visual Sensory Physiology. In O'Donnell, M, ed., Tested Studies for Laboratory Teaching. Volume 28, 8 pp. (Proceedings, Association for Biology Laboratory Education, Pudue University, June, 2006), in press.
13. Gatchell, D.W. and Linsenmeier, R.A. (2007) The VaNTH Biomedical Engineering Key Content Survey, Part Two. Proceedings of the American Society for Engineering Education Annual Conference and Exposition, June, 2007, AC2007-2786, 15 pp.

14. Pazos-Lago, P., Olds, S.A. and Linsenmeier, R.A. (2007) Using technology to enhance active learning in the classroom. Proceedings of the American Society for Engineering Education Annual Conference and Exposition, June, 2007, AC2007-972, 13 pp.
15. Linsenmeier, R.A., Pazos, P., Lipps, D.B. and Dwyer, K.L. (2007) Work in Progress: Assessment of an electronic learning management system in bioengineering. Proceedings, 37<sup>th</sup> ASEE/IEEE Frontiers in Education Conference. October, 2007, Milwaukee, WI. 2pp.
16. Linsenmeier, R.A. and Gatchell, D.W. (2008) Physiology problems and physiology concepts for biomedical engineering students. Proceedings of the American Society for Engineering Education Annual Conference and Exposition, June, 2008, AC2008-1467, 21 pp.
17. Linsenmeier, R.A., Alley, J.M., Hirsch, P.L., Klein, S.S., Greenberg, J., and Bourgeois, M. (2008) A unique research experience in bioengineering education for students in the VaNTH REU. Proceedings of the American Society for Engineering Education Annual Conference and Exposition, June, 2008, AC 2008-884, 14 pp.
18. McKenna, A.F., Linsenmeier, R.A. and Glucksberg, M.R. (2008) Characterizing computational adaptive expertise. Proceedings of the American Society for Engineering Education Annual Conference and Exposition, June, 2008, AC 2008-2738. 10 pp.
19. Cole, J.Y., Linsenmeier, R.A., Glucksberg, M.R., and McKenna, A.F. (2010) Assessing engineering students' mathematical modeling abilities in capstone design. Proceedings of the American Society for Engineering Education Conference and Exposition. Louisville, KY, June, AC2010-1017, 13pp.
20. Carberry, A.R., McKenna, A.F., Linsenmeier, R.A. and Cole, J. (2011) Exploring senior engineering students' conceptions of modeling. Proceedings of the American Society for Engineering Education Conference and Exposition. Vancouver, BC, Canada, June, AC2011-311.
21. Cole, J.L., Linsenmeier, R.A., Molina, E., Glucksberg, M.R., McKenna, A.F.,(2011) Assessing Engineering Students' Abilities at Generating and Using Mathematical Models in Capstone Design. Proceedings of the American Society for Engineering Education Conference and Exposition. Vancouver, BC, Canada, June, AC2011-662. <https://peer.asee.org/17517>
22. Linsenmeier, R.A., McElrath, M.A., Murray, W. and Haugh-Scheidt, L.M. (2011) Student reactions to electronic learning modules in BME. Proceedings of the American Society for Engineering Education Conference and Exposition. Vancouver, BC, Canada, June, AC2011-1305.
23. Cole, J.Y., Linsenmeier, R.A., Miller, T., Glucksberg, M.R. (2012) Using Instruction to Improve Mathematical Modeling in Capstone Design. Proceedings of the American Society for Engineering Education Conference and Exposition. San Antonio, TX June, AC2012-4617. <https://peer.asee.org/22185>
24. Linsenmeier, R.A. and Gatchell, D.E. (2014) Similarities and Differences in Undergraduate Biomedical Engineering Curricula in the United States. Proceedings of the American Society for Engineering Education Conference and Exposition. Indianapolis, IN, 2014 (Paper 9731)
25. Johnson, R.E. and Linsenmeier, R.A. (2015) Evaluating and Enhancing Problem-Solving Skills in a Physiology Course for Biomedical Engineering Students (Work in Progress). Proceedings of the American Society for Engineering Education Conference and Exposition. Seattle, WA, 2015 (10.18260/p.24027)
26. Gatchell, D.W., Linsenmeier, R., Glucksberg, M.R., Murphy, R.L., Coker, A.O., and Osuntoki, A.A. (2016) Developing Innovative Interdisciplinary Biomedical Engineering Programs in Nigeria: Lessons Learned. ASEE International Forum, New Orleans, LA, June, 2016, paper 17523
27. Linsenmeier, R.A. and Woods, L.M. (2017) Work in Progress: Educating Biomedical Engineering Graduate Students about Teaching. American Society for Engineering Education Conference and Exposition, Columbus, OH, June, 2017.
28. Linsenmeier, R.A. (2020) Required computer science education in BME undergraduate programs. American Society for Engineering Education Conference and Exposition, online conference. <https://peer.asee.org/35147>