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***EDUCATION***

Stanford University School of Medicine	postdoctoral	1979-80	Neurobiology
University of California, Berkeley	postdoctoral	1976-79	Chemical Biodynamics
State U. New York Downstate Medical Center	Ph.D.	1972-76	Biophysics
Columbia University	predoctoral	1971-72	Physics
State U. New York College at Cortland	B.S.	1967-71	Physics

***RESEARCH/PROFESSIONAL EXPERIENCE***

1980--	<b>Staff Scientist/Assistant/Associate Professor</b> (1980-1990), Senior Staff Scientist/ <b>Professor</b> (1990-2018), <b>Vice Chairman</b> (1987-1994), <b>Institutional Professor</b> (2019--), Division of Neurobiology; <b>Director</b> (1980-2007)/ <b>Co-Director</b> (2008--), Laboratory of Neurochemistry; Barrow Neurological Institute, Phoenix, Arizona
1981--	<b>Research Assistant Professor</b> (1981-1990), <b>Research Associate Professor</b> (1990-1994), <b>Research Professor</b> (1995--), Department of Pharmacology, University of Arizona College of Medicine; <b>Affiliate Faculty</b> (1988-1990), <b>Principal Faculty</b> (1990--), Graduate Program in Neuroscience, University of Arizona; Tucson, Arizona
1989--	<b>Adjunct Professor</b> (1989--), Department of Chemistry and Biochemistry/School of Molecular Science; <b>Member</b> , Arizona State University-Barrow Neurological Institute Program in Neuroscience; Arizona State University, Tempe, Arizona
2007-2018	<b>Vice President-Research</b> , St. Joseph's Hospital and Medical Center and Barrow Neurological Institute, Phoenix, Arizona
1985-2007	<b>Director</b> , Clinical Assay Development Laboratory, St. Joseph's Hospital and Medical Center, Phoenix, Arizona
1995-2006	<b>Member</b> , Molecular and Cell Biology Program, Arizona State University, Tempe, Arizona
1999-2006	<b>Member</b> , Biomedical Engineering Program, Arizona State University, Tempe, Arizona
1996-2000	<b>Scientific Advisor</b> , Amethyst Technologies Inc., Scottsdale, Arizona
1998-2000	<b>Scientific Advisor</b> and <b>Director of Cell Biology</b> , Regenesis Biomedical, Scottsdale, Arizona
1979-1980	<b>Postdoctoral Fellow</b> , Department of Neurobiology, Stanford University School of Medicine, Stanford, California, Dr. Eric M. Shooter, Advisor
1978-1979	<b>Research Associate</b> , Laboratory of Chemical Biodynamics, Lawrence Berkeley Laboratory, Berkeley, California
1976-1978	<b>Postdoctoral Fellow</b> , Laboratory of Chemical Biodynamics, Lawrence Berkeley Laboratory, University of California, Berkeley, California, Dr. Edward L. Bennett, Advisor
1973	<b>Participant, Kona, Hawaii Expedition</b> , Research Vessel <i>ALPHA HELIX</i> , Scripps Institute of Oceanography, National Science Foundation
1972-1976	<b>Research and Teaching Assistant</b> , Department of Medicine Program in Biophysics, State University of New York Downstate Medical Center, Brooklyn, New York, Dr. Paul Dreizen, Advisor
1971-1972	<b>Laboratory Assistant</b> , Department of Physics, Columbia University, New York, New York
1970-1971	<b>Laboratory Assistant</b> , Department of Physics, SUNY College, Cortland, New York

**PUBLICATIONS****SYMPOSIA, BOOK CHAPTERS, INVITED REVIEWS AND THESES**

1. Lukas(iewicz) RJ (1977) Effects of pressure on myosin ATPase as modified by actin and the regulatory proteins. Ph.D. Thesis, SUNY Downstate Medical Center, Xerox University Microfilms, Ann Arbor, publication #77-3079.
2. Lukas RJ (1985) Current perspectives on developmental neurobiology. BNI Quarterly 1: 8-11.
3. Schwartz AS, Frey JL, Lukas RJ (1988) Risk factors in Alzheimer's disease: Is aluminum hazardous to your health? BNI Quarterly 4: 2-8.
4. Lukas RJ (1988) Evidence for functional and structural diversity of nicotinic acetylcholine receptors. NATO ASI Series (Clementi F, Gotti C, Sher E, eds) Vol H25: 61-75.
5. Lukas RJ (1989) Nicotinic acetylcholine receptor diversity: Agonist binding and functional potency. Prog Brain Res (Nordberg A, Fuxe K, Holmstedt B, eds) Vol 79: 117-127.
6. Lukas RJ (1990) Neurotransmitter receptor diversity: The nicotinic acetylcholine receptor family. BNI Quarterly 6: 15-23.
7. Lukas RJ, Bencherif M (1992) Heterogeneity and regulation of nicotinic acetylcholine receptors. Intl Rev Neurobiol 34: 25-131.
8. Lukas RJ (1995) Diversity and patterns of regulation of nicotinic acetylcholine receptors. Annals New York Acad Sci 757: 153-168.
9. Lukas RJ (1998) Neuronal nicotinic acetylcholine receptors. *In* The Nicotinic Acetylcholine Receptor: Current Views and Future Trends (Barrantes FJ, ed), Springer Verlag, Berlin/Heidelberg and Landes Publishing Co, Georgetown, Texas, pp 145-173.
10. Sparks DL, Lukas RJ, Drumm DA (1998) Dementing Lewy body disease: A review of the literature. BNI Quarterly 14: 4-12.
11. Lukas RJ (1999) Cell lines as models for studies of nicotinic acetylcholine receptors. *In* Neuronal Nicotinic Receptors: Pharmacology and Therapeutic Opportunities (Arneric SP, Brioni JD, eds), Wiley-Liss, Inc, New York, pp 81-97.
12. Lukas RJ, Changeux J-P, Le Novère N, Albuquerque EX, Balfour DJK, Berg DK, Bertrand D, Chiappinelli VA, Clarke PBS, Collins AC, Dani JA, Grady SR, Kellar KJ, Lindstrom JM, Marks MJ, Quik M, Taylor PW, Wonnacott S (1999) International Union of Pharmacology. XX. Current status of the nomenclature for nicotinic acetylcholine receptors and their subunits. Pharmacol Rev 51: 397-401.
13. Sparks DL, Kuo Y-M, Roher A, Martin T, Lukas RJ (2000) Alterations of Alzheimer's disease in the cholesterol-fed rabbit, including vascular inflammation. Preliminary observations. Annals New York Acad Sci 903: 335-344.
14. Lukas RJ, Albuquerque EX, Balfour DJK, Clarke PBS, Lindstrom JM, Le Novère N, Quik M, Wonnacott S (2000) Nicotinic acetylcholine receptors. *In* The IUPHAR Compendium of Receptor Characterization and Classification, IUPHAR Media, London.
15. Lukas RJ (2000) Acetylcholine receptors, nicotinic. *In* TiPS Receptor and Ion Channel Nomenclature Supplement (Vol 11; Alexander SPH, Peters JA, eds), Elsevier, London, pp 7-12.
16. Lukas RJ, Wilkins LH Jr, Croasdell G (2000) Meeting report: 10<sup>th</sup> Neuropharmacology conference: Neuronal nicotinic receptors. Curr Drugs Ltd.
17. Lukas RJ, Fryer JD, Eaton JB, Gentry CL (2002) Some methods for studies of nicotinic acetylcholine receptor pharmacology. *In* Nicotinic Receptors and the Nervous System (Levin ED, ed), CRC Press, Boca Raton, pp 3-27.
18. Coons SW, Duane DC, Johnson EW, Lukas RJ, Wu J, Kerrigan JF (2004) Etiology and epileptogenesis of hypothalamic hamartomas: Opening the door. BNI Quarterly 20: 34-41.
19. Lukas RJ (2005) Translational impact of basic research studies of nicotinic acetylcholine receptors. BNI Quarterly 21: 4-12.
20. Lukas RJ, Wu J, George AA, Kuo Y-P, Xu L, Hu J (2006)  $\beta$ -Amyloid directly inhibits human  $\alpha 4\beta 2$ -nicotinic acetylcholine receptors. Revista Brasileira Neurologia, II International Congress on Neuroregeneration (Proceedings), pp 17-20.
21. Lukas RJ (2006) Potential roles for nicotinic acetylcholine receptors in Parkinson's and Alzheimer's diseases. Revista Brasileira Neurologia, II International Congress on Neuroregeneration (Proceedings), pp 21-29.
22. Lukas RJ, Bencherif M (2006) Recent developments in nicotinic acetylcholine receptor biology. *In*

- Biological and Biophysical Aspects of Ligand-Gated Ion Channel Receptor Superfamilies (Arias H, ed), Research Signpost, Trivandrum, pp 27-59.
23. Lukas RJ (2006) Pharmacological effects of nicotine and nicotinic receptor subtype pharmacological profiles. *In Medication Treatments for Nicotine Dependence* (George TP, ed), CRC Press, Boca Raton, pp 3-23.
  24. Matta SG, Balfour DJ, Benowitz NL, Boyd RT, Buccafusco JJ, Caggiula AR, Craig CR, Collins AC, Corrigan WA, Damaj MI, Donny EC, Gardiner PS, Grady SR, Heberlein U, Leonard SS, Levin ED, Lukas RJ, Markou A, Marks MJ, McCallum SE, Parameswaran N, Perkins KA, Picciotto MR, Quik M, Rose JE, Rothenfluh A, Schafer WR, Stolerman IP, Tyndale RF, Wehner JM, Zirger JM (2007) Guidelines on nicotine dose selection for in vivo research. *Psychopharm* 190: 269-319.
  25. Wu, J, Lukas RJ (2011) Naturally-expressed nicotinic acetylcholine receptor subtypes. *Biochem Pharm* 82: 800-807.

### **PATENTS**

1. Bencherif M, Lukas RJ (2009) Chimeric nicotinic receptor subunits [PCT/US2003/022550, WO 2004/009775 and US2005/0255551A1] US 7,550,293.
2. Shi F-D, Lukas RJ, Vollmer T (2014) Nicotinic attenuation of CNS inflammation and autoimmunity [PCT/US2009/056671, WO 2010/030887 and US 2012/0322832 A1] US 8,841,329.

### **ORIGINAL ARTICLES**

1. Lukas(iewicz) RJ, Hanley MR, Bennett EL (1978) Properties of radiolabeled  $\alpha$ -bungarotoxin derivatives and their interaction with nicotinic acetylcholine receptors. *Biochem* 17: 2308-2313.
2. Lukas(iewicz) RJ, Bennett EL (1978)  $\alpha$ -Bungarotoxin binding properties of a central nervous system nicotinic acetylcholine receptor. *Biochim Biophys Acta* 544: 294-308.
3. Lukas RJ, Morimoto H, Bennett EL (1979) Effects of thio-group modification and  $\text{Ca}^{2+}$  on agonist-specific state transitions of a central nicotinic acetylcholine receptor. *Biochem* 18: 2384-2395.
4. Miller JV, Lukas RJ, Bennett EL (1979) Effects of thiol modification and  $\text{Ca}^{2+}$  on agonist-specific state transitions of nicotinic acetylcholine receptor from *Torpedo californica* electroplax. *Life Sciences* 24: 1893-1900.
5. Lukas RJ, Bennett EL (1979) Agonist-induced affinity alterations of a central nervous system  $\alpha$ -bungarotoxin receptor. *J Neurochem* 33: 1151-1157.
6. Lukas RJ, Bennett EL (1979) Effects of local anesthetics on cholinergic agonist binding affinity of central nervous system  $\alpha$ -bungarotoxin receptors. *FEBS Lett* 108: 356-358.
7. Lukas RJ, Bennett EL (1980) Interaction of nicotinic receptor affinity reagents with central nervous system  $\alpha$ -bungarotoxin-binding entities. *Molec Pharm* 17: 149-155.
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11. Lukas RJ (1984) Properties of curaremimetic neurotoxin binding sites in the rat central nervous system. *Biochem* 23: 1152-1160.
12. Lukas RJ (1984) Detection of low affinity  $\alpha$ -bungarotoxin binding sites in the rat central nervous system. *Biochem* 23: 1160-1164.
13. Lukas RJ (1984) Monoclonal rat anti-*Torpedo* electroplax nicotinic acetylcholine receptor antibodies: Immunochemical characterization. *J Immuno Meth* 74: 129-138.
14. Lukas RJ (1986) Characterization of curaremimetic neurotoxin binding sites on membrane fractions derived from the human medulloblastoma clonal line, TE671. *J Neurochem* 46: 1936-1941.
15. Siegel HN, Lukas RJ (1986) Allosteric modification of  $\alpha$ -bungarotoxin binding by the "calcium channel antagonist" verapamil. *Molec Brain Res* 1: 37-42.
16. Lukas RJ (1986) Interactions of polyclonal anti-*Electrophorus* nicotinic receptor antisera with *Torpedo* nicotinic receptor. *Intl J Biochem* 18: 609-616.

17. Lukas RJ (1986) Immunochemical and pharmacological distinctions between curaremimetic neurotoxin binding sites of central, autonomic, and peripheral origin. *Proc Natl Acad Sci, USA* 83: 5741-5745.
18. Lukas RJ (1986) Interactions of anti-nicotinic acetylcholine receptor antibodies with rat brain and muscle antigenic determinants. *Cellular Molec Neurobiol* 6: 281-289.
19. Lukas RJ (1986) Characterization of curaremimetic neurotoxin binding sites on cellular membrane fragments derived from the rat pheochromocytoma PC12. *J Neurochem* 47: 1768-1773.
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23. Lukas RJ, Cullen MJ (1988) An isotopic rubidium ion efflux assay for the functional characterization of nicotinic acetylcholine receptors on clonal cell lines. *Analyt Biochem* 175: 212-218.
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26. Lukas RJ (1990) Heterogeneity of high affinity nicotinic  $^3\text{H}$ -acetylcholine binding sites. *J Pharm Exper Thera* 253: 51-57.
27. Lukas RJ, Audhya T, Goldstein G, Lucero L (1990) Interactions of the thymic polypeptide hormone, thymopoietin, with neuronal nicotinic  $\alpha$ -bungarotoxin binding sites (nBgtS) and with muscle-type, but not ganglia-type, nicotinic acetylcholine receptor ligand-gated ion channels. *Molec Pharm* 38: 887-894. Retracted in part in *Molec Pharm* 44: 680 (1993).
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32. Bencherif M, Lukas RJ (1992) Vanadate amplifies receptor-mediated accumulation of inositol trisphosphates and inhibits inositol tris- and tetrakis-phosphatase activities. *Neurosci Lett* 134: 157-160.
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34. Lukas RJ, Norman SA, Lucero L (1993) Characterization of nicotinic acetylcholine receptors expressed by cells of the SH-SY5Y human neuroblastoma clonal line. *Molec Cellular Neurosci* 4: 1-12.
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38. Bencherif M, Lukas RJ (1993) Cytochalasin modulation of nicotinic cholinergic receptor expression and muscarinic receptor function in human TE671/RD cells: A possible functional role of the cytoskeleton. *J Neurochem* 61: 852-864.
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  45. Lukas RJ, Eisenhour CM (1996) Interactions between tachykinins and diverse, human nicotinic acetylcholine receptor subtypes. *Neurochem Res* 21: 1245-1257.
  46. Ke L, Lukas RJ (1996) Effects of steroid exposure on ligand binding and functional activities of diverse nicotinic acetylcholine receptor subtypes. *J Neurochem* 67: 1100-1112.
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  48. Ke L, Eisenhour CE, Bencherif M, Lukas RJ (1998) Effects of chronic nicotine treatment on expression and function of diverse nicotinic receptor subtypes. I. Dose- and time dependent effects of nicotine treatment. *J Pharmacol Exper Thera* 286: 825-840.
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  51. Fryer JD, Lukas RJ (1999) Antidepressants non-competitively inhibit nicotinic acetylcholine receptor function. *J Neurochem* 72: 1117-1124.
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