

Curriculum Vitae**DAVID B. JACOBY, M.D.****CURRENT APPOINTMENT:**

Professor of Medicine, Physiology/Pharmacology, and Anesthesiology and Peri-Operative Medicine
Chief, Pulmonary and Critical Care Medicine
Edwards Professor of Pulmonary Medicine
Vice-Chair for Research, Department of Medicine
Director, MD/PhD Training Program
Oregon Health and Science University
Portland OR.

PERSONAL DATA:

Office Address
Division of Pulmonary and Critical Care Medicine
Oregon Health and Science University
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Portland OR 97239
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EDUCATION AND TRAINING:

A.B. 1972-1976 Princeton University, Princeton, New Jersey
1976-1978 Far Eastern University, Manila, Philippines
M.D. 1978-1980 New York Medical College, Valhalla, New York

Internship:

1980-1981 Temple University Hospital, Philadelphia, Pennsylvania

Residency:

1981-1983 Temple University Hospital, Philadelphia, Pennsylvania
1983-1984 Chief Resident, Temple University Hospital, Philadelphia, Pennsylvania

Fellowship:

1984-1985 Clinical Pulmonary Fellow, University of California, San Francisco
1985-1987 Research Fellow, Cardiovascular Research Institute, University of California, San Francisco

NIH Pulmonary Training Grant HL-07185

CERTIFICATION:

Medical Licensure: Oregon Medical License MD (b) (6)

Diplomate in Internal Medicine	American Board of Internal Medicine	1984
Diplomate in Pulmonary Diseases	American Board of Internal Medicine	1986
Diplomate in Critical Care Medicine	American Board of Internal Medicine	1989

PROFESSIONAL EXPERIENCE:

1988-1990	Assistant Professor of Medicine Pulmonary and Critical Care Medicine University of Maryland Baltimore, MD
1990-1994	Assistant Professor of Medicine Pulmonary and Critical Care Medicine Johns Hopkins University, School of Medicine Baltimore, MD
1994-2002	Associate Professor of Medicine Division Pulmonary and Critical Care Medicine Johns Hopkins University, School of Medicine Baltimore, MD Associate Professor of Physiology Johns Hopkins University, Bloomberg School of Public Health Baltimore, MD
10/98-4/99	Head, Pulmonary Drug Discovery Bristol-Myers Squibb Pharmaceutical Research Institute
2002-2003	Professor of Medicine Division Pulmonary and Critical Care Medicine Johns Hopkins University, School of Medicine Baltimore, MD
2003-present	Professor of Medicine Chief, Division Pulmonary and Critical Care Medicine Oregon Health and Science University Portland, OR

- 2004-present Professor of Physiology and Pharmacology
Oregon Health and Science University
Portland, OR
- 2006-2008 Deputy Director, Oregon Clinical and Translational Research Institute.
Oregon Health and Science University
Portland, OR
- 2007-present Professor of Anesthesiology and Peri-Operative Medicine
Oregon Health and Science University
Portland, OR
- 2008-present Vice Chair for Research, Department of Medicine
Oregon Health and Science University
Portland, OR
- 2008-present Director, MD/PhD Training Program
Oregon Health and Science University
Portland, OR

PUBLICATIONS:

Peer-reviewed Journal Articles

1. Corrales RJ, Coleman DL, Jacoby DB, Leikauf GD, Hahn HL, Nadel JA, Widdicombe JH. Ion transport across cat and ferret tracheal epithelia. *J Appl Physiol* 61:65-1070, 1986.
2. Barthelson RA, Jacoby DB, Widdicombe JH. Regulation of chloride secretion in dog tracheal epithelium by protein kinase C. *Am J Physiol* 253 (Cell Physiol 22):C802-C808, 1987.
3. Jacoby DB, Ueki IF, Loegering DA, Gleich GJ, Widdicombe JH, Nadel JA. Effect of human eosinophil major basic protein on ion transport in canine tracheal epithelium. *Am Rev Respir Dis* 137:13-16, 1988.
4. Jacoby DB, Tamaoki J, Borson DB, Nadel JA. Influenza infection causes airway hyperresponsiveness by decreasing enkephalinase. *J Appl Physiol* 64(6):2653-2658, 1988.
5. Barnett K, Jacoby DB, Nadel JA, Lazarus SC. The effects of epithelial cell supernatant on isolated canine tracheal smooth muscle. *Am Rev Respir Dis* 138:780-783, 1988.

6. Dusser DJ, Jacoby DB, Djokic TD, Rubinstein I, Borson DB, Nadel JA. Virus induces airway hyperresponsiveness to tachykinins: Role of neutral endopeptidase. *J Appl Physiol* 67:1504-1511, 1989.
7. Jacoby DB, Nadel JA. Parainfluenza virus infection of cultured airway epithelial cells. *J Virol Methods* 26:199-208, 1989.
8. Fryer AD, El-Fakahany EE, Jacoby DB. Parainfluenza virus type 1 reduces the affinity of agonists for muscarinic receptors in guinea-pig lung and heart. *Eur J Pharmacol* 181:51-58, 1990.
9. Fryer AD, Jacoby DB. Parainfluenza virus infection damages inhibitory M2 muscarinic receptors on pulmonary parasympathetic nerves in the guinea-pig. *Brit J Pharmacol* 102:267-271, 1991.
10. Reiss TF, Nadel JA, Gruenert DC, Jacoby DB. Infection of cultured human airway epithelial cells by influenza A virus. *Life Sciences* 49:1173-1181, 1991.
11. Murray TC, Jacoby DB. Viral infection increases contractile but not secretory responses to substance P in ferret trachea. *J Appl Physiol* 72:608-611, 1992.
12. Choi AMK, Jacoby DB. Influenza virus A infection induces interleukin-8 gene expression in human airway epithelial cells. *FEBS Letters* 309:327-329, 1992.
13. Fryer AD, Jacoby DB. The function of pulmonary M2 muscarinic receptors in antigen-challenged guinea pigs is restored by heparin and poly-L-glutamate. *J Clin Invest* 90:2292-2298, 1992.
14. Jacoby DB, Gleich GJ, Fryer AD. Human eosinophil major basic protein is an endogenous allosteric antagonist at the inhibitory muscarinic M2 receptor. *J Clin Invest* 91:1314-1318, 1993.
15. Fryer AD, Jacoby DB. Effect of inflammatory cell mediators on M2 muscarinic receptors in the lungs. *Life Sciences* 52:529-536, 1993.
16. Yang J, Emala CW, Hirshman CA, Proud D, Jacoby DB, Levine MA. Identification and characterization of GTP-binding proteins coupled to adenylyl cyclase in guinea pig tracheal epithelial cells. *Am J Respir Cell Mol Biol* 10:665-672, 1994.
17. Jacoby DB, Choi AMK. Influenza virus infection induces differential expression of antioxidant genes in human airway epithelial cells. *Free Rad Biol Med*, 6:821-824, 1994.
18. Fryer AD, Yarkony KA, Jacoby DB. The effect of leukocyte depletion on pulmonary M2 muscarinic receptor function in parainfluenza virus-infected guinea pigs. *Br J Pharmacol* 112:588-594, 1994.

19. Elbon CL, Jacoby DB, Fryer AD. Pretreatment with an antibody to interleukin-5 prevents loss of pulmonary M2 muscarinic receptor function in antigen-challenged guinea pigs. *Am J Respir Cell Mol Biol* 12:320-328, 1995.
20. Subauste MC, Jacoby DB, Richards SM, Proud D. Infection of a human respiratory epithelial cell line with rhinovirus: induction of cytokine release and modulation of susceptibility to infection by cytokine exposure. *J. Clin. Invest.* 96:549-557, 1995.
21. Shelhamer JH, Levine SJ, Wu T, Jacoby DB, Kaliner MA, Rennard SI. Airway inflammation. *Ann Intern Med.* 123:288-304, 1995.
22. Gleich GJ, Jacoby DB, Fryer AD. Eosinophil-associated inflammation in bronchial asthma: a connection to the nervous system. *Int Arch Allergy Immunol.* 107:205-207, 1995.
23. Choi AMK, Knobil K, Otterbein SL, Eastman DA, Jacoby DB. Oxidant stress responses in influenza virus pneumonia: gene expression and transcription factor activation. *Am J Physiol, Lung Cell Mol Physiol* L383-391, 1996.
24. Kahn RM, Okanlami OA, Jacoby DB, Fryer AD. Viral infection induces dependence of neuronal M2 muscarinic receptors on cyclooxygenase in guinea pig lung. *J Clin Invest.* 98:299-307, 1996.
25. Fryer AD, Elbon CL, Kim AL, Xiao H-Q, Levey AI, Jacoby DB. Cultures of airway parasympathetic nerves express functional M2 muscarinic receptors. *Am J Respir Cell Mol Biol* 15:716-725, 1996.
26. Fryer AD, Huang YC, Rao G, Jacoby DB, Mancilla E, Whorton R, Piantadosi C, Kennedy T, Hoidal J. Selective O-desulfation produces non-anticoagulant heparin that retains pharmacologic activity in the lung. *J Pharmacol Exp Ther* 282:208-219:1997.
27. Belmonte KE, Jacoby DB, Fryer AD. Increased function of inhibitory neuronal M2 muscarinic receptors in diabetic rat lung. *Br J Pharmacol* 121:1287-1294, 1997.
28. Costello RW, Schofield BH, Gleich GJ, Kephardt G, Jacoby DB, Fryer AD. Recruitment of eosinophils to airway nerves inhibits M2 receptor function in antigen challenged guinea pigs. *Am J Physiol, Lung Cell Mol Physiol* 273:L93-L103, 1997.
29. Evans LE, Fryer AD, Jacoby DB, Gleich GJ, Costello RW. Pretreatment with an antibody to eosinophil major basic protein prevents hyperresponsiveness by protecting neuronal M2 muscarinic receptors in antigen-challenged guinea pigs. *J Clin Invest* 100:2254-2262, 1997.

30. Knobil K, Choi AMK, Weigand GW, Jacoby DB. The role of oxidants in influenza virus-induced gene expression. *Am J Physiol, Lung Cell Mol Physiol* 274:L134-L142, 1998.
31. Costello RW, Fryer AD, Belmonte KE, Jacoby DB. Effects of tachykinin NK1 receptor antagonists on vagal hyperreactivity and neuronal M2 muscarinic receptor function in antigen challenged guinea pigs. *Br. J. Pharmacol.* 124:267-276, 1998.
32. Jacoby DB, Xiao H-Q, Lee N, Chan-Li Y, Fryer AD. Virus- and interferon-induced loss of inhibitory M2 muscarinic receptor function and gene expression in cultured airway parasympathetic neurons. *J. Clin Invest.* 102:242-248, 1998.
33. Fryer AD, Adamko DJ, Yost BE, Jacoby DB. Effects of inflammatory cells on neuronal M2 muscarinic receptor function in the lung. *Life Sci.* 64:449-55, 1999.
34. Wagner EM, Jacoby DB. Methacholine induces reflex bronchoconstriction. *J. Appl. Physiol.* 86: 294-297, 1999.
35. Costello RW, Evans CM, Yost BL, Belmonte KE, Gleich GJ, Jacoby DB, Fryer AD. Antigen-induced hyperreactivity to histamine: the role of the vagus nerves and eosinophils. *Am. J. Physiol.: Lung Cell Mol. Physiol.* 124:L709-14, 1999
36. Adamko, DA, Yost BL, Gleich GJ, Fryer AD, Jacoby DB. Ovalbumin sensitization changes the inflammatory response to subsequent parainfluenza infection: eosinophils mediate airway hyperresponsiveness, M2 muscarinic receptor dysfunction, and antiviral effects. *J Exp Med* 190:1465-1478, 1999.
37. Jacoby DB, Elwood T, Yost BL, Fryer AD. Neurokinin receptor antagonists in virus-infected airways: Dissociation of effects on inflammation and hyperresponsiveness. *Am. J. Physiol.: Lung Cell. Mol. Physiol.* 279:L59-65, 2000
38. Evans CM, Belmonte KE, Gleich GJ, Costello RW, Jacoby DB, Fryer AD. Substance P induced M2 receptor dysfunction and airway hyperreactivity via neurokinin-1 receptor mediated eosinophil degranulation. *Am J Physiol Lung Cell Mol Physiol.* 279:L477-86, 2000
39. Jacoby DB, Yost BL, Kumaravel B, Chan-Li Y, Xiao H-Q, Kawashima K, Fryer AD. Glucocorticoid treatment increases inhibitory M₂ muscarinic receptor expression and function in the airways. *Am J Respir Cell Mol Biol.* 24:485-491, 2001
40. Evans CM, Jacoby DB, Fryer AD. Dexamethasone prevents airway hyperreactivity by inhibiting the interaction of eosinophils with neuronal M₂ muscarinic receptors. *Am J Respir Crit Care Med.* 163:1484-92, 2001.
41. Zhou C, Fryer AD, Jacoby DB. Structure of the M2 muscarinic acetylcholine receptor gene and its promoter. *Gene* 271:87-92, 2001.

42. Beck HN, Draushuk K, Jacoby DB, Higgins D, Lein PJ. BMP-5 promotes dendritic growth in cultured sympathetic neurons. *BMC Neuroscience* 2:12, 2001.
43. Bowerfind WML, Fryer AD, Jacoby DB. Double-stranded RNA causes airway hyperreactivity and neuronal M₂ muscarinic receptor dysfunction. *J Appl Physiol.* 92:1417-1422, 2002.
44. Coulson FR, Jacoby DB, Fryer AD. Increased function of inhibitory neuronal M₂ muscarinic receptors in trachea and ileum of diabetic rats. *Br J Pharmacol.* 135:1355-1362, 2002.
45. Sawatzky DA, Kingham PJ, Court E, Kumaravel B, Fryer AD, Jacoby DB, McLean WG, Costello RC. Eosinophil adhesion to cholinergic nerves via ICAM-1 and VCAM-1 and associated eosinophil degranulation. *Am J Physiol.Lung Cell Mol Physiol.* 282:L1279-88, 2002
46. Carr MJ, Hunter DD, Jacoby DB, Udem BJ. Expression of tachykinins in non-nociceptive vagal afferent neurons during respiratory tract viral infection in guinea-pigs. *Am J Respir Crit Care Med.* 165:1071-5, 2002.
47. Jacoby DB. Virus-induced asthma attacks. *JAMA*, 287:755-761, 2002.
48. Spannhake EW, Reddy SP, Jacoby DB, Yu XY, Saatian B, Tian J. Synergism between rhinovirus infection and oxidant pollutant exposure enhances airway epithelial cell cytokine production. *Environ Health Perspect.* 110:665-70, 2002
49. Adamko DJ, Fryer AD, Bochner BS, Jacoby DB. CD8+ T lymphocytes in viral hyperreactivity and M₂ muscarinic receptor dysfunction. *Am J Respir Crit Care Med.* 167:550-556, 2003
50. Jacoby DB. Airway neural plasticity: the nerves they are a-changin'. *Am J Respir Cell Mol Biol.* 28:138-41, 2003.
51. Moreno L, Jacoby DB, Fryer AD. Dexamethasone prevents virus induced hyperresponsiveness via multiple mechanisms. *Am J Physiol Lung Cell Mol Physiol.* 285:L451-5, 2003.
52. Hirasawa S, Mendoza JA, Jacoby DB, Kobayashi C, Fitzgerald RS, Schofield B, Chandrasegaran S, Shirahata M. Diverse cholinergic receptors in the cat carotid chemosensory unit. *Adv Exp Med Biol.* 536:313-9,2003.
52. Coulson FR, Jacoby DB, Fryer AD. Insulin regulates neuronal M₂ muscarinic receptor function in the ileum of diabetic rats. *J Pharmacol Exp Ther.* 308:760-6, 2004 .

53. Lee AM, Fryer AD, van Rooijen N, Jacoby DB. The role of macrophages in virus-induced airway hyperresponsiveness and neuronal M2 muscarinic receptor dysfunction. *Am J Physiol Lung Cell Mol Physiol*. 286:L1255-9, 2004.
54. Cummings R, Zhao Y, Jacoby DB, Spannhake EW, Ohba M, Garcia JGN, Watkins T, He DH, Saatian B, Natarajan V Protein kinase C δ mediates lysophosphatidic acid-induced NF- κ B activation and interleukin-8 secretion in human bronchial epithelial cells. *J Biol Chem*. 279:41085-94, 2004.
55. Yost BL, Gleich GJ, Jacoby DB, Fryer AD. Multiple roles of eosinophils in long term hyperreactivity following a single ozone exposure. *Am J Physiol Lung Cell Mol Physiol*. 289:L627-35, 2005
56. Fryer AD, Stein LH, Nie Z, Curtis DE, Evans CM, Hodgson ST, Jose PJ, Belmonte KE, Fitch E, Jacoby DB. Neuronal eotaxin and the effects of CCR3 antagonist on airway hyperreactivity and M2 receptor dysfunction. *J Clin Invest*, 116:228-236, 2006.
57. Verboon NG, Lorton JK, Jacoby DB, Fryer AD. Atropine pretreatment enhances airway hyperreactivity in antigen challenged guinea pigs through an eosinophil dependent mechanism. *Am J Physiol Lung Cell Mol Physiol*. 292:L1126-35, 2007
58. Korcheva V, Wong J, Lingauer M, Jacoby DB, Iordanov MS, Magun B. Role of apoptotic signaling pathways in regulation of inflammatory responses to ricin in primary murine macrophages. *Mol Immunol*, 44:2761-71, 2007
59. Wong J, Korcheva V, Jacoby DB, Magun B. Intrapulmonary delivery of ricin at high dosage triggers a systemic inflammatory response and glomerular damage. *Am J Pathol*. 170:1497-510, 2007
60. Nie Z, Nelson CS, Jacoby DB, Fryer AD. Expression and regulation of ICAM-1 on airway parasympathetic nerves. *J Allergy Clin Immunol*. 119:1415-22, 2007
61. Wong J, Korcheva V, Jacoby DB, Magun BE. Proinflammatory responses of human airway cells to ricin involve stress-activated protein kinases and NF- κ B. *Am J Physiol Lung Cell Mol Physiol*. 293:L1385-94, 2007.
62. Proskocil BJ, Bruun DA, Lorton JK, Blensly KC, Jacoby DB, Lein PJ, Fryer AD. Antigen sensitization influences organophosphorus pesticide-induced airway hyperreactivity. *Environ Health Perspect*. 116:381-8, 2008.
63. Hays LE, Zodrow DM, Yates JE, Deffebach ME, Jacoby DB, Olson SB, Pankow JF, Bagby GC. Cigarette smoke induces genetic instability in airway epithelial cells by suppressing FANCD2 expression. *Br J Cancer*. 98:1653-61, 2008

64. Hackett TL, Shaheen F, Johnson A, Wadsworth S, Pechkovsky DV, Jacoby DB, Kicic A, Stick SM, Knight DA. Characterization of side population cells from human airway epithelium. *Stem Cells*. 26:2576-85, 2008.
65. Verhein KC, Jacoby DB, Fryer AD. IL-1 receptors mediate persistent, but not acute, airway hyperreactivity to ozone in guinea pigs. *Am J Respir Cell Mol Biol*. 39:730-8, 2008.
66. Nie Z, Jacoby DB, Fryer AD. Etanercept prevents airway hyperresponsiveness by protecting neuronal M2 muscarinic receptors in antigen-challenged guinea pigs. *Br J Pharmacol*. 156:201-10, 2009.
67. Moreno L, Verbout NG, Fryer AD, Jacoby DB. Retinoic acid prevents virus-induced hyperreactivity and M2 receptor dysfunction via anti-inflammatory and antiviral effects. *Am J Physiol Lung Cell Mol Physiol*. 297:L340-6, 2009.
68. Verbout NG, Jacoby DB, Gleich GJ, Fryer AD. Atropine-enhanced, antigen challenge-induced airway hyperreactivity in guinea pigs is mediated by eosinophils and nerve growth factor. *Am J Physiol Lung Cell Mol Physiol*. 297:L228-37, 2009.
69. Gold MC, Cerri S, Smyk-Pearson S, Cansler ME, Vogt TM, Delepine J, Winata E, Swarbrick GM, Chua WJ, Yu YY, Lantz O, Cook MS, Null MD, Jacoby DB, Hariff MJ, Lewinsohn DA, Hansen TH, Lewinsohn DM. Human mucosal associated invariant T cells detect bacterially infected cells. *PLoS Biology*, 29;8(6):e1000407, 2010.
70. Kaufman EH, Fryer AD, Jacoby DB. Toll-like receptor 7 agonists are potent bronchodilators in guinea pig within minutes of administration. *J Allergy Clin Immunol*. 127:462-9, 2011.
71. Verhein KC, Hazari MS, Moulton BC, Jacoby IW, Jacoby DB, Fryer AD. The persistence of ozone induced hyperreactivity is mediated by induction of substance P in nerves supplying the lung. *Am J Physiol Lung Cell Mol Physiol*. 300(2):L176-84, 2011.
72. Nie Z, Scott GD, Weis PD, Itakura A, Fryer AD, Jacoby DB. Role of TNF- α in virus-induced airway hyperresponsiveness and neuronal M2 muscarinic receptor dysfunction. *Br J Pharmacol*, 164:444-452, 2011.
73. Foster EL, Simpson EL, Fredrikson LJ, Lee JJ, Lee NA, Fryer AD, Jacoby DB. Eosinophils increase neuron branching in human and murine skin and in vitro. *PLoS ONE* 6(7):e22029, 2011.
74. Buels KS, Jacoby DB, Fryer AD. Non-bronchodilating mechanisms of tiotropium prevent airway hyperreactivity in a guinea pig model of allergic asthma. *Br J Pharmacol*. 2011 In press.

75. Koguchi Y, Gardell JL, Buenafe AC, Thauland TJ, Bivins-Smith E, Jacoby DB, Slifka MK, Parker DC. Antigen-specific T cell help via delivery of preformed CD40 ligand. PLoS ONE, 2012 In press.

Editorials and reviews

1. Jacoby DB, Fryer AD. Abnormalities in the neural control of smooth muscle in virus-infected airways. Trends in Pharmacologic Sci 11:393-395, 1990.
2. Jacoby DB, Fryer AD. Virus-induced airway hyperresponsiveness - possible involvement of neural mechanisms. Am Rev Respir Dis 144:1422-1423, 1991.
3. Jacoby DB, Hirshman CA. General anesthesia in patients with viral respiratory infections - an unsound sleep? (Editorial) Anesthesiology74:969-972, 1991.
4. Jacoby DB, Role of the respiratory epithelium in asthma. Res Immunol. 148:48-58, 1997.
1. Fryer AD, Jacoby DB. Muscarinic receptors and control of airway smooth muscle. Am J Respir Crit Care Med. 158: S146-S153, 1998.
2. Costello RW, Jacoby DB, Fryer AD. Pulmonary neuronal M2 muscarinic receptor function in asthma and animal models of hyperreactivity. Thorax 53:613-616, 1998.
3. Jacoby DB. Neurogenic inflammation of the airways. In: Immunobiology of Asthma and Rhinitis: Pathogenic Factors and Therapeutic Options. T Casale, ed. American Lung Association. 1999.
4. Jacoby DB, Fryer AD. Interaction of viral infections with muscarinic receptors. Clin Exp Allergy. Suppl 2:59-64, 1999.
5. Fryer AD, Costello RW, Jacoby DB. Muscarinic receptor dysfunction in asthma. Allergy Clin. Immunol. International 12:63-67, 2000.
6. Costello RW, Jacoby DB, Gleich GJ, Fryer AD. Eosinophils and airway nerves in asthma. Histol Histopathol.15:861-8, 2000.
7. Jacoby DB, Costello RW, Fryer AD. Eosinophil recruitment to the airway nerves (invited review). J. Allergy Clin Immunol. 107:211-218, 2001.
8. Jacoby DB, Fryer AD. Anticholinergic therapy for airway disease. Life Sci. 68:2565-72, 2001.
9. Lee AM, Jacoby DB, Fryer AD. Selective muscarinic receptor antagonists for airway disease. Curr Opin Pharmacol, 1:223-229, 2001.
10. Fryer AD, Jacoby DB. Plasticity of cholinergic and tachykinergic nerves: the convergence of the twain. Am J Physiol Lung Cell Mol Physiol. 283:L907-8, 2002.

15. Jacoby DB. Airway neural plasticity: the nerves they are a-changin'. *Am J Respir Cell Mol Biol*. 28:138-41, 2003.
16. Jacoby DB. Virus-induced asthma attacks. *J Aerosol Med*. 17:169-73, 2004.
17. Jacoby DB. Pathophysiology of airway viral infections. *Pulm Pharmacol Ther*. 17:333-6, 2004.
18. Adler KB, Shapiro SD, Gallup M, Wu R, Randell SH, Holtzman MJ, Evans CM, Jacoby DB, Tesfaigzi Y, Rose MC, Mossman BT, Prince A, Reddy SP, Davis CW, Matthay MA. Airway epithelium, inflammation, and mechanisms of disease: A tribute to Carol B. Basbaum. *Am J Respir Cell Mol Biol*. 34:523-6. 2006.
19. Verhein KC, Fryer AD, Jacoby DB. Neural control of airway inflammation. *Curr Allergy Asthma Rep*. 6:484-90, 2009.
20. Kaufman EH, Jacoby DB. Upping the antedrug: is a novel anti-inflammatory Toll-like receptor 7 agonist also a bronchodilator? *Br J Pharmacol*. 2011, In press.

Book Chapters

1. Jacoby DB, Nadel JA. Airway Epithelial Metabolism and Airway Smooth Muscle Hyperresponsiveness. In: *Airway Smooth Muscle in Health and Disease*. RF Coburn, Ed., Plenum Publishing Corp., pp 237-266, 1989.
2. Jacoby DB, Liu MC. Asthma. In: *The Principles and Practice of Medicine*. Stobo JD, Traill TA, Hellman DB, Ladenson PW, Petty BG, eds. 23rd edition. Appleton & Lange, Inc.; Connecticut, 1992.
3. Jacoby DB. Immunopharmacology of epithelial cell-virus interactions. In: *The Handbook of Immunopharmacology*. C.P. Page, series editor. Academic, Press, pp. 159-195, 1994.
4. Jacoby DB. Mediator functions of epithelial cells. In: *Asthma and Rhinitis*. Busse WW, Holgate S, eds. Blackwell Scientific Publications, pp. 573-583, 1995.
5. Gleich GJ, Fryer AD, Jacoby DB. Eosinophil granule proteins and bronchial hyperreactivity. In: *Asthma. Physiology, Immunopharmacology, and Treatment. Fourth International Symposium*. Holgate ST, Austen Lichtenstein LM, Kay AB, eds. Academic Press: London. pages 119-129, 1993.
6. Jacoby DB. Changes in airway structure and function after viral infection. In: *Airways and Environment: From Injury to Repair*. ed: Chretien, J and Dusser, DJ, Marcel Dekker, pages 415-436, 1996.

7. Jacoby DB, Fryer, AD. Parasympathetic Innervation of the Lungs in Pulmonary Pharmacology & Therapeutics. In: Pulmonary & Critical Care Pharmacology and Therapeutics. ed: Alan R. Leff, McGraw Hill, pages 81-98, 1996.
8. Jacoby DB, Animal models of bronchial hyperreactivity IV: Virus-induced BHR. In: Airways Smooth Muscle: In vivo Pharmacology. eds: Raeburn, D and Giembycz, MA, Birkhauser, Verlag AG., pages 121-145, 1996.
9. Fryer AD, Costello RW, Jacoby DB. Cholinergic mechanisms and anti-cholinergic therapy in respiratory diseases. Chpt. 48. In: Allergy: Principals and Practice. eds: Middleton,E. et al. Pp 668-677, 1998.
10. Knobil K, Jacoby D. Mediator functions of epithelial cells. In: Airway Inflammation. Eds. Busse WW, Holgate ST. Vol 117 in: Lung Biology in Health and Disease. Series editor: Lenfant C. Marcel Dekker, Inc., New York, pp. 469-495, 1998.
11. Jacoby DB. Mediator functions of epithelial cells. In: Asthma and Rhinitis. 2nd Ed. Busse WW, Holgate S, eds. Blackwell Scientific Publications, 2000, pp. 771-783.
12. Fryer AD, Jacoby DB. Anticholinergic therapy and muscarinic receptor subtypes. New and exploratory agents for asthma. Z Diamonte and M Yeadon, eds. Marcel Dekker, Inc. 2000, pp.85-118.
13. Adamko DJ, Fryer AD, Jacoby DB Dysfunction of prejunctional muscarinic M2 receptors: role of enviromental factors. In: Progress in Inflammation Research. Muscarinic Receptors in Airways Diseases. Zaagsma J, Meurs H, Roffel AF (eds). Birkhauser, 2001.
14. Fryer AD, Jacoby DB. Cholinergic mechanisms and anti-cholinergic therapy in respiratory diseases. Chpt. 91. In: Middleton's Allergy: Principles and Practice. eds: Atkinson, F. et al. Pp 1603 - 18, 2009.
15. Verboet NG, Jacoby DB. Muscarinic receptor agonists and antagonists; effects on inflammation and immunity. In: Handbook of Experimental Pharmacology: Muscarinic Receptor Pharmacology and Therapeutic, Springer 208:403-27, 2012.
16. Bivins-Smith ER, Jacoby DB. Eosinophil Activities and Virus-Induced Asthma. In: Eosinophils in Health and Disease. In Press.

EXTRAMURAL SPONSORSHIP:

ACTIVE:

NIH-NHLBI 1 R01 HL61013: "Mechanism of virus-induced hyperreactivity in atopics." 03/01/07-02/28/12 . 15% Effort. \$1,123,980. D.B. Jacoby, Principal Investigator.

NIH-NHLBI R01 HL-55543: "Ozone inhibition of neuronal M2 muscarinic receptors" Allison Fryer, Principal Investigator, 01/01/01-12/31/11, \$1,300,000, D.B. Jacoby, Co-Investigator (10% effort).

NIH-NHLBI T-32 HL-83808: "Multidisciplinary research training in pulmonary medicine." 07/01/08 - 06/30/13, 10% effort, \$1,876,667. D.B. Jacoby, Principal Investigator.

NIH-NIAID R56 AI092210: "Bronchodilator effects of toll-like receptor 7 agonists." 7/1/2011-6/30/2012, 25% effort, \$385,000. D.B. Jacoby, Principal Investigator.

NIH-NHLB R01 HL113023 - "Acute airway effects of TLR7 and TLR8 stimulation in health and disease." 4/2012 - 3/2017. **REVIEWED 10/2011: 5th percentile. - \$2,898,479**

NIH-NIAMS R01 AR061567 - "Eosinophil nerve interactions in mouse models of

dermatitis." - 4/2102 - 3/2017. **REVIEWED 10/2011: 5TH percentile - \$3,379,453**

PREVIOUS:

NIH-NIAID R21 AI075064: "Airway eosinophil activation by anticholinergic therapy." 07/01/08-06/30/11 10% Effort. \$423,500. D.B. Jacoby, Principal Investigator.

NIH-NHLBI 1R01 HL-071795: "Antiviral effects of eosinophils in the lungs." 08/02/04 - 07/31/09. 25% Effort. \$1,510,000. D.B. Jacoby, Principal Investigator.

NIH-NIGMS T-32 GM067549: "OHSU Medical Scientist Training Program." 07/01/04 - 06/01/09. 10% effort. D.B. Jacoby, Principal Investigator.

NIH U54 RR023424: "Oregon Clinical and Translational Science Institute." Eric Orwoll, Principal Investigator, 09/01/06-08/31/11, \$62,000,000, D.B. Jacoby, Deputy Director (25% effort).

NIH-NHLBI 1 R01 HL61013: "Mechanism of virus-induced hyperreactivity in atopics." 07/10/98-06/30/05 . 15% Effort. \$1,123,980. D.B. Jacoby, Principal Investigator.

NIH-NHLBI RO1 HL-54659: "Environmental influences on the vagal control of airway." 12/01/96 - 6/30/02. 40% Effort. \$1,394,786 - D.B. Jacoby, Principal Investigator.

(b) (4)

American Heart Association: "Virus-induced hyperresponsiveness: role of viral neuraminidase, 7/94-6/97, \$ (b) (4), D.B. Jacoby, Principal Investigator.

NIH Program Project Grant: "Epithelial function and dysfunction in chronic sinusitis." 09/01/95-01/31/97. David Proud, Principal Investigator. Project 3: "Secretory functions of the epithelium in chronic sinusitis." \$380,000, D.B. Jacoby, Principal Investigator.

NIH-NHLBI FIRST Award HL47126: "Virus Induced Changes in Airway Epithelial Function," 1/91-12/95, \$350,000, D.B. Jacoby, Principal Investigator.

(b) (4) 7/91-6/93, \$ (b) (4), D.B. Jacoby, Principal Investigator.

Edward Livingston Trudeau Scholar Award (American Lung Association): "Virus Induced Airway Hyperresponsiveness," 07/90-06/93, \$ (b) (4), D.B. Jacoby, Principal Investigator.

Special Research Initiative Support, University of Maryland: "Release of Chemotactic Substances by Virus-Infected Airway Epithelium," 07/90-06/91, \$3,495, D.B. Jacoby, Principal Investigator.

Special Research Initiative Support, University of Maryland: "Viral effects on airway parasympathetic nerves," 07/89-06/90, \$9,960, D.B. Jacoby, Principal Investigator.

Special Research Initiative Support, University of Maryland: "In vitro Study of the Effect of Viral Infection on Airway Smooth Muscle Responsiveness," \$9,994, 07/88-06/89. D.B. Jacoby, Principal Investigator.

American Lung Association: "In vitro Study of Virus-Induced Airway Hypersecretion and Smooth Muscle Hyperresponsiveness," \$ (b) (4), 07/88-06/90. D.B. Jacoby, Principal Investigator.

California Research and Medical Education Fund Award: "Role of the Eosinophil in Asthma," (b) (4), 06/86-12/87. D.B. Jacoby, Principal Investigator.

TEACHING:

Advisees:

(b) (6)

(b) (6)



(b) (6)



(b) (6)



(b) (6)

Thesis Committee Participation:

(b) (6)

(b) (6)

Fellow Research Committee Participation:

Chairman, Committee for (b) (6)
Chairman, Committee for (b) (6)
Chairman, Committee for (b) (6)
Member, Committee for (b) (6)
Member, Committee for (b) (6)

Member, Committee for (b) (6)
 Member, Committee for (b) (6)
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 Member, Committee for (b) (6)
 Member, Committee for (b) (6)
 Member, Committee for (b) (6)

Classroom instruction:

1997 Clinical correlation in medical students pathophysiology course, Johns Hopkins School of Medicine.

1995-2002 Department of Physiology, Undergraduate Physiology Course, Clinical Aspects of Pulmonary, Cardiology, Neurology, and Nephrology, Johns Hopkins School of Public Health.

1999-2003 Journal Club section leader for first year medical students' Molecules and Cells, Developmental Biology, Immunology, and Neuroscience courses, Johns Hopkins School of Medicine.

2004 – present “Asthma” and “Pulmonary Embolism” – first year medical students, OHSU.

2007 – present “Pulmonary Physiology” – Ten week course for graduate students, now adapted for Pulmonary and Critical Care Fellows.

Clinical Instruction or Attending Responsibilities:

2002 – 2003 Faculty Member, (b) (6), Johns Hopkins

Medical Intensive Care Units
 Pulmonary Consultation Service

PROFESSIONAL ACTIVITIES:

Society Membership:

1985 - present	American Thoracic Society
1992 - 1995	Respiratory Structure & Function Program Committee
2001 – 2004	Allergy and Immunology Program Committee
2000- present	American Society for Clinical Investigation

Study Sections:

1995 - 1996	NIH Ad Hoc Surgery and Bioengineering Study Section
1996 - 2002	American Lung Association Research Grant Review Committee
1994 - 2002	Maryland Lung Association Research Grant Review Committee

1997-98, 2000-02	Maryland Lung Association, Chairman Research Grant Review Committee
1997	NIH SCOR Review Committee: Lung Development
1999	NIH RFA Review Committee: Airway Remodeling
2000 –2005	SSS-3 SBIR Study Section
2001	NIH NRSA Fellowship Review Committee.
2003, 2005	Chair, SSS-3 SBIR Study Section
2006	NIH SCCOR Review committee: Host Factors in Chronic Lung Disease
2006	NIH – NIEHS Director’s Challenge Grant Review Committee.
2007	NIH – NIEHS DISCOVER Awards Review Committee.
2007	NIH – Minority Training Grant Review Committee.
2007	NIH – Allergy, Immunology, and Transplantation Research Grant Review Committee.
2007	American Thoracic Society Fellows Career Development Award Review Committee
2007	NIH - Asthma and Allergic Diseases Cooperative Research Centers Review Committee.
2007	NIH - SBIR Study Section
2008	NIH - Clinical Translational Science Award Review Committee
2008	NIH – Minority Training Grant Review Committee.
2008	American Thoracic Society Fellows Career Development Award Review Committee
2009	NIH – Clinical Translational Science Award Review Committee
2009	NIH – AsthmaNet Review Committee
2009	NIH – Clinical Research Curriculum Award (K30) Review Committee
2010	NIH - Clinical Translational Science Award Review Committee
2011	NIH - Clinical Translational Science Award Review Committee

Advisory Committees:

11/2010 – present	Pulmonary-Allergy Drugs Advisory Committee, United States Food and Drug Administration.
12/2011	Psychopharmacologic Drugs Advisory Committee
2010 – present	External Advisory committee for P01AI081672 – “SP-A as an Immune Modulator,” [REDACTED] ^{(b) (6)} , PI. Duke University
2011 – present	External Advisory Committee for P01HL010342 – “Mechanisms Underlying Chronic Lung Pathology,” [REDACTED] ^{(b) (6)} , PI. Johns Hopkins University.
2011 – present	External Advisory Committee for T32HL066988 – “Multidisciplinary Training in Pulmonary Research” [REDACTED] ^{(b) (6)} PI. University of Rochester.

2006 – present Internal Advisory Committee for T32DK067864 – “Nephrology Training Grant.” [REDACTED]^{(b) (6)}, PI, Oregon Health and Science University.

2011 – present Internal Advisory Committee for K12HL108974 – “Oregon Multidisciplinary Training Program for Emergency Medicine Clinical Research.” [REDACTED]^{(b) (6)}, PI, Oregon Health and Science University.

Other:

10/2009 Judge, 6th Annual Respiratory Disease Young Investigators’ Forum, Phoenix AZ.

11/2009 Judge, Annual Biomedical Research Conference for Minority Students, Phoenix AZ.

EDITORIAL ACTIVITIES:

Editorial Board Member:

1997-1999 Journal of Applied Physiology,
 2001-2004. American Journal of Respiratory and Critical Care Medicine,
 2002-present. American Journal of Physiology, Lung Cell and Molecular Physiology
 2003–2011 American Journal of Medicine

Manuscript Reviewer:

Journal of Applied Physiology
 Journal of Clinical Investigation
 Anesthesiology
 American Journal of Respiratory and Critical Care Medicine
 Life Sciences
 Medicine
 American Journal of Respiratory Cell and Molecular Biology
 Journal of Allergy and Clinical Immunology
 Chest
 American Journal of Physiology
 British Journal of Pharmacology
 European Journal of Pharmacology
 American Journal of Gastroenterology
 Lung
 Thorax
 Journal of Physiology

HONORS/AWARDS:

1976 Magna Cum Laude, Princeton University
 1979 Alpha Omega Alpha, New York Medical College
 1980 Radiology Award, New York Medical College
 2000 Elected to American Society of Clinical Investigation
 2004, 2006, 2007 Housestaff Teaching Award, OHSU

INSTITUTIONAL ADMINISTRATIVE APPOINTMENTS:

1991 Committee on Part-Time Faculty Appointments, Pulmonary Division, Johns Hopkins
 1991 Committee on Lung Transplantation, Johns Hopkins
 1992 Chair, Pulmonary Division Search Committee for Clinical Director, Johns Hopkins
 1994-1998 Johns Hopkins Department of Medicine Research Retreat Committee.
 1996-1998 Organized Pulmonary/Physiology Weekly Combined Research Seminar, Johns Hopkins
 1999 Johns Hopkins Pulmonary Division Research Committee
 2000-2003 Johns Hopkins Department of Medicine Internship Selection Committee
 2001-2003 Research Director, Johns Hopkins Division of Pulmonary and Critical Care Medicine
 2001-2003 Associate Director for Graduate Education, T-32 Pulmonary Critical Care/Physiology Training Grant, Johns Hopkins
 2003-present ICU Steering Committee, OHSU
 (b) (6)
 2005-2007 Institutional Animal Care and Use Committee, OHSU
 2005-present Faculty Council, OHSU
 2005-present Executive Committee of the Professional Board, OHSU
 2006-2008 Deputy Director, Oregon Clinical and Translational Science Institute.
 2007-2008 Member, Search Committee for Director of the Oregon Primate Research Center.
 2007-2008 Chair, Search Committee for Director, Division of Hematology and Oncology, OHSU.
 2008-present Vice Chair for Research, Department of Medicine, OHSU.
 2008-present Director, MD/PhD Training Program
 2009-present Member, Microbiology Laboratory Oversight Committee, OHSU.
 2010-present Member, Research Roadmap Steering Committee, OHSU.
 (b) (6)
 2011-present Graduate Program Review Committee, OHSU.
 2010-present Clinical Microbiology Oversight Committee, OHSU.

INVITED LECTURES:

1/91 Frontiers in Research & Clinical Management of Asthma. "Viruses and Asthma," Johns Hopkins Asthma and Allergy Center

- 7/91 Aspen Allergy Conference. "Epithelial Mediators"
- 1/92 Frontiers in Research & Clinical Management of Asthma. "Viruses and Asthma," Johns Hopkins Asthma and Allergy Center
- 1/93 American Thoracic Society Meeting, "Viral Infection of Airway Epithelium," San Francisco.
- 1/93 Chair, Session on Airway Epithelial Function. American Thoracic Society Meeting, San Francisco.
- 9/93 Visiting Professor, University of Michigan, September 2-3, 1993.
- 9/93 NIH Workshop on Stress and Asthma, "Treatment of Asthma," Bethesda, Maryland, September 27-28, 1993.
- 4/94 NIH Combined Clinical Staff Conference, "Airway Inflammation," Bethesda, Maryland, April 27, 1994.
- 5/94 Chair, Session on Airway Viral Infections. American Thoracic Society Meeting, Boston.
- 5/95 American Thoracic Society, Post Graduate Course: Virus-Induced Airways Dysfunction.
- 5/95 "Virus-Induced Changes in the Neural Control of the Airways," Seattle, Washington.
- 5/95 "Virus-Induced Changes in the Neural Control of the Airways," Division of Pulmonary and Critical Care Medicine, Oregon University, Portland.
- 7/95 American Academy of Allergy & Immunology/American Thoracic Society, Asthma: Theory to Treatment, "Respiratory Viruses and Genetic Regulation of The Inflammatory Response," Chicago, Illinois, July 15-17, 1995.
- 10/95 American Society of Anesthesiologists Annual Meeting, Speaker, Atlanta, Georgia, October 21-25, 1995
- 3/96 Temple University Hospital, Update in Pulmonary & Emergency Medicine. "Sudden Death in Asthma."
- 3/96 Oregon Health Sciences University, Pulmonary Grand Rounds, "Viral Infections in Asthma." 4/97 Visiting Professor, University of Pittsburgh. April 2-3, 1997.
- 7/97 Mt. Sinai Medical Center, "Viruses and Asthma," New York, NY

- 8/97 Center for Indoor Air Research Symposium, "Virus-induced airway muscarinic receptor dysfunction," Jackson Hole, WY.
- 4/98 Meet the Professor Symposium. American Thoracic Society Meeting. "Viruses and Asthma," Chicago, IL.
- 5/98 University of Texas, Houston. "Viruses and Asthma."
- 5/98 Yale University Hospital. "Viruses and Asthma." New Haven, Connecticut.
- 6/98 Third International Conference on Pediatric Pulmonology. "Airway Viral Infections Early in Life: Mechanisms That May Lead to Airway Hyperresponsiveness." Principality of Monaco.
- 8/98 Bronchitis VI Symposium, "Interaction of Infections with Muscarinic Receptors," Groningen, Netherlands.
- 4/99 Case Western Reserve University. "Viruses and Asthma." Cleveland, OH.
- 4/99 Chair, Session on Airway Neural Control, American Thoracic Society Meeting, San Diego.
- 11/99 American College of Chest Physicians. "Influenza." Chicago, IL. 11/99 Mayo Clinic. "Viruses, Eosinophils, and Asthma." Rochester MN.
- 11/99 National Institutes of Health. "Interaction of antigen sensitization and infection: eosinophil participation in airway dysfunction and antiviral defense." Bethesda, MD.
- 1/00 Mt. Sinai Medical Center: "Eosinophil-dependent and eosinophil-independent mechanisms of virus-induced M2 muscarinic receptor dysfunction."
- 2/00 Visiting Professor, Baylor University. 2/22-23, 2000.
- 3/00 Emory University School of Medicine: "Eosinophil-dependent and eosinophil-independent mechanisms of virus-induced M2 muscarinic receptor dysfunction."
- 11/00 IXth International Symposium on Muscarinic Receptors. "Muscarinic Antagonists in Airways Disease." Houston TX.
- 3/01 Frontiers in Research & Clinical Management of Asthma. "Epidemiology of Viruses in Asthma," Johns Hopkins Asthma and Allergy Center
- 4/01 Workshop on Irritable Bowel Syndrome and Asthma: Similarities and Differences in Pathogenesis and Pathophysiology: "The role of the autonomic nervous system in asthma." Las Vegas, Nevada.
- 4/01 University of Washington, Pulmonary Grand Rounds: "Virus-induced asthma attacks." Seattle, Washington.

- 5/01 College of Physicians and Surgeons, Columbia University, Pulmonary Research Conference: "Virus-induced asthma attacks." New York, NY.
- 10/01 Mayo Clinic, Scottsdale. "Viruses, Eosinophils, and Asthma." Scottsdale, AZ.
- 11/01 Oregon Health and Science University, "Virus-induced asthma attacks." Portland, OR.
- 5/02 University of Arizona, "Virus-induced asthma attacks." Tucson, AZ
- 4/04 American Lung Association of Idaho, Invited Speaker "Viruses, eosinophils, and asthma." Boise, Idaho.
- 5/04 University of Washington, Pulmonary Research Conference: "Viruses, eosinophils, and asthma." Seattle, Washington.
- 6/04 Intermountain Western Allergy Association Conference, Invited Speaker, "Influenza: An Asthmatic's Perspective" and "Virus-induced Asthma Attacks," Sun Valley, Idaho
- 7/04 3rd International Symposium on Cough, Invited Speaker, "Pathophysiology of Airway Viral Infections.: London, UK.
- 10/04 University of California, Davis. Visiting Professor. "Viruses, eosinophils, and asthma."
- 10/04 American Lung Association of Washington, Invited Speaker, "Viruses, eosinophils, and asthma." Seattle, Washington
- 11/04 University of Washington, Allergy Journal Club, "Viruses, eosinophils, and asthma." Seattle, Washington
- 4/05 VanSeaPort Annual Meeting. Invited Speaker. "Virus Induced Asthma Attacks." Whistler, British Columbia.
- 2/06 MD Anderson Grand Rounds. "Virus Induced Asthma Attacks." Houston, TX.
- 5/07 Duke University Pulmonary Research Conference. "Virus Induced Asthma Attacks." Durham, NC.
- 7/07 5th International Eosinophil Symposium. Invited Speaker. "Eosinophils in Virus Induced Asthma." Salt Lake City, UT.
- 9/08 Pfizer Visiting Professor, University of Rochester. "Virus Induced Asthma Attacks," and "Influenza: 1918 and H5N1." Rochester, NY.

2/09 Visiting Professor, Temple University. “Clinical Pathological Conference: 36 year old woman with pulmonary nodules and chronic cough.” “Influenza: 1918 and H1N1.” and “Virus induced asthma attacks.” Philadelphia, PA.

10/09 Mayo Clinic, Scottsdale. “Virus-induced asthma attacks.” Scottsdale, AZ.

10/09 Invited Speaker, Northwest Allergy Forum. Portland OR.

11/09 Invited Speaker, Epithelial Biology Conference, University of Washington. Seattle, Washington.

11/09 Invited Speaker at 20th Anniversary Symposium, Johns Hopkins Asthma and Allergy Center. Baltimore MD.

6/11 7th International Eosinophil Symposium. Invited Speaker, “Virus-Eosinophil Interactions in Asthma and Allergic Pathology.” Quebec City, Canada.

11/11 16th Annual Conference of the Asian Pacific Society of Respiriology. Invited Speaker. “Viruses in Asthma.” Shanghai, China.

11/11 University of Alberta, Edmonton. Invited Speaker. “Influenza: 1918, Bird, and Swine.”

12/11 Invited Speaker, Epithelial Biology Conference, University of Washington. Seattle, Washington.