

Jordan P. Metcalf, M.D.

Professor of Medicine
Virginia and Jean Rumsey Briscoe Chair in Pulmonary Diseases
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Contact Information:

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Education:

1980: BGS, Chemistry, University of Nebraska
1984: MD, Medicine, University of Nebraska

Academic Appointments:

1981-1984: Student Researcher, Dr. C.A. Blakes' Laboratory, U. of Nebraska Med. Ctr.
1984-1985: Intern, Internal Medicine, U. of Nebraska Affill. Hosp., Omaha, NE
1985-1986: Research Fellow, Liver Study Unit, Alcohol and Liver Disease; UNMC
1986-1988: Resident, Internal Medicine, U. of Nebraska Affill. Hosp.
1988-1991: Fellow, Pulmonary/Critical Care, Dept. of IM, U. of Nebraska Affill. Hosp.
1991-1993: Research Fellow, Pulm. Dis., Dept. of IM, U. of Iowa Hosp. and Clinics, Iowa City, IA
1993: Associate, Pulmonary Diseases, Dept. of IM, U. of Iowa Hosp. and Clinics, Iowa City, IA
1994: Assistant Professor, Pulmonary/Critical Care Section, Department of Medicine, University of Oklahoma Health Sciences Center, Oklahoma City, OK
2000: Associate Professor, Pulmonary/Critical Care Section, Department of Medicine, University of Oklahoma Health Sciences Center, Oklahoma City, OK
2001: Adjunct Associate Professor, Dept. Microbiology and Immunology, University of Oklahoma Health Sciences Center, Oklahoma City, OK
2007: Professor, Pulmonary/Critical Care Section, Department of Medicine, University of Oklahoma Health Sciences Center, Oklahoma City, OK
2007: Adjunct Professor, Dept. Microbiology and Immunology, University of Oklahoma Health Sciences Center, Oklahoma City, OK

Awards and Honors:

1980: Summa Cum Laude, University of Nebraska at Omaha
1981: Shenken Award (Anatomy), University of Nebraska Medical Center
1981-1983: Regents Scholar, University of Nebraska Medical Center
1982-1984: Nellie House Craven Res. Fellowship, U. of Nebraska Medical Center
1983: Alpha Omega Alpha, U. of Nebraska Medical Center
1993: Henry Christian Award for Excellence in Research
1993: Trainee Investigator Award, American Federation for Clinical Research
1995: Clinical Investigator Development Award, National Heart, Lung and Blood Institute, NIH
2000: Virginia and Jean Rumsey Briscoe Chair in Pulmonary Diseases
2000: Otho Whiteneck Professional Award, American Lung Association of Oklahoma

Other Professional Experiences and Memberships:

American Federation for Medical Research (former Midwest Sec-Treasurer, Former Midwest Section Chair, former National Councilor)

American Thoracic Society

Oklahoma Thoracic Society (Former President)

American Lung Association-Oklahoma (Former Board member)

Central Society for Clinical and Translational Research (Former Councilor, Former Sec-Treasurer, Current President)

American Society for Microbiology

Research Funding:

Current:

Past:

- 2004-2014: NIH Program Project Grant, "Molecular and Immunologic Analysis of the Pathobiology of Human Anthrax", Role: PI, Awarded: \$1,833,320
- 2011-2012: NIH CCHI Discretionary Fund Project, "Human Lung Organ Culture as a Model for Virus-Host Interactions", Role: Co-PI, Awarded: \$118,148
- 2010-2013: OCAST, "Innate Response to Swine-Origin Influenza A/H1N1 Virus", Role: PI, \$135,000 2008-2011: FAMRI Clinical Innovator Award, "Cigarette Smoke Exposure and Influenza Virus Infection in Human Lung", Role: Collaborator, Awarded: \$325,500 .
- 2009-2010: NIH CCHI Discretionary Fund Project, Role: Mentor, Awarded: \$79,463
- 2005-2007: American Heart Association Grant-in-Aid, "Human Lung Innate Immune Response to Adenovirus", Role: PI, Awarded: \$143,000
- 2002-2006: American Lung Association of Oklahoma, "Signal Transduction and Cytokine Induction by Adenovirus", Role: PI, Awarded: \$105,000

Selected Publications:

1. Blake C.A., Metcalf J.P., Hendricks S.E. Anterior pituitary gland secretion after forebrain ablation: periovulatory gonadotropin release. *Endocrinology* 111: 789-93, 1982.
2. Dada M.O., Metcalf J.P., Olson D.R., Blake C.A. Sex differences in gonadotrophin secretion in rats of different ages. *Medipharma Med J* 1:44-89, 1986.
3. Metcalf J.P., Casey C.A., Sorrell M.F., Tuma D.J. Chronic ethanol administration alters hepatic surface membranes as evidenced by decreased concanavilin A binding. *Proc Sci Exp Biol Med* 185: 1-5, 1987.
4. Dada M.O., Metcalf J.P., Blake C.A. Basal gonadotropin hormone release rates during the period of selective follicle-stimulating hormone release in the juvenile female rat. *Life Sci* 45:863-8, 1989.
5. Fagbohun C.F., Dada M.O., Metcalf J.P., Ashiru O.A., Blake C.A. Blockade of the selective increase in serum follicle-stimulating hormone concentration in immature female rats and its effects on ovarian follicular development. *Biol Reproduct* 42:625-32, 1990.
6. Robbins R.A., Thompson A.B., Koyama S., Metcalf J.P., Rickard K.A., Spurzem J.R., Rennard S.I. Cigarette smoking and neutrophil migration. *J Immunol Res* 1990; 2:178-188.
7. Metcalf J.P., Thompson A.B., Gossman G.L., et al. Gcglobulin functions as a cochemotaxin in the lower respiratory tract. A potential mechanism for lung neutrophil recruitment in cigarette smokers. *Am Rev Res Dis* 143:844-9, 1991.
8. Thompson A.B., Huerta G., Robbins R.A., Sisson J.H., Spurzem J.R., Von Essen S., Rickard K.A., Romberger D.J., Rubinstein I., Metcalf J.P., Yates R.S., Ghafouri M., Stahl, M.G., Daughton D.M., Rennard S.I. The bronchitis index, a semiquantitative visual scale for the assessment of airways inflammation. *Chest* 1993; 103:1482-1488.
9. Metcalf J.P., Armitage J.O., Rennard S. I., et. al. Corticosteroids as adjunctive therapy for diffuse alveolar hemorrhage associated with bone marrow transplantation. *Am J Med* 96:327-34, 1994.
10. Metcalf J.P., Monick M.M., Hunninghake G.W. The adenoviral E1A gene product upregulates the cytomegalovirus major immediate early gene promoter in inflammatory cells. *Am J Resp Cell Mol Biol* 10:448-52, 1994.
11. Metcalf J.P. Adenovirus E1A 13S gene product upregulates tumor necrosis factor gene. *Am J Physiol* 270 (Lung Cell Mol Physiol 14): L535-L540, 1996.

12. Booth J.L., Metcalf J.P., Type-Specific Induction of Interleukin-8 by Adenovirus *Am J Resp Cell Mol Biol* 21:521-527, 1999.
13. Hitt D.C., Booth J.L., Dandapani V., Pennington L.R., Gimble J.R., Metcalf J.P. A Flow Cytometric Protocol for Titering Recombinant Adenoviral Vectors Containing the Green Fluorescent Protein. *Mol Biotechnol* 14:197-203, 2000.
14. Keddissi JI, Metcalf J.P. The use of Non-invasive ventilation in acute respiratory failure associated with oral contrast aspiration pneumonitis. *Respir Care* 45:494-6, 2000.
15. Sanchez T.A., Booth J.L., Habib I., Metcalf J.P. The Zinc Finger And Carboxyl Regions Of Adenovirus E1a 13s CR3 Are Important For Transactivation Of The Cytomegalovirus Major Immediate Early Promoter By Adenovirus. *Am J Resp Cell Mol Biol* 23:670-7, 2000.
16. Alcorn MJ, Booth JL, Coggeshall KM, Metcalf J.P. Adenovirus Type 7 Induces Interleukin-8 Production via Activation of Extracellular Regulated Kinase 1/2. *J Virol.* 75:6450-9, 2001.
17. Sanchez T.A., Booth J.L., Metcalf J.P. TNF Activation by Adenovirus E1A 13S CR3 Occurs in a Cell Dependent and Cell Independent Manner. *Am J Physiol Lung Cell Mol Physiol* 283: L619-27, 2002.
18. Booth, J.L., K.M. Coggeshall, B.E. Gordon, and Metcalf, J.P. Adenovirus 7 Induces Interleukin-8 In A Lung Slice Model And Requires Activation Of Erk. *J Virol.* 78:4156-64, 2004.
19. Nazir, SA., Metcalf J.P. The Innate Immune Response To Adenovirus. *J Invest. Med.* 53:292-304., 2005.
20. Xu, X., Huang, S., Patterson, E., Garrett, M.W., Kaufman, K.M., Metcalf, J.P., Zu, M, Dunn, S.T., Kem, D.C. Proteasome Degradation of GRK2 During Ischemia and Ventricular Tachyarrhythmias in a Canine Model of Myocardial Infarction. *Am J Physiol Heart Circ Physiol.* 289:H1960-7, 2005.
21. Chakrabarty, K., Wu, W., Booth, J.L., Duggan, E.S., Coggeshall, K.M., Metcalf, J. P., Bacillus Anthracis Spores Stimulate Cytokine And Chemokine Innate Immune Responses In Human Alveolar Macrophages Through Multiple MAPK Pathways. *Infect Immun* 74:4430-8, 2006.
22. Wu, W., Booth, J.L., Coggeshall, K.M., Metcalf, J.P. Calcium-dependent viral internalization is required for Adenovirus type 7 induction of IL-8 protein *Virology* 2006; 355:18-29.
23. Kem DC, Metcalf JP, Cornea A, Dunnam M, Engelbrecht A, Yu X. Is pseudo-Cushing's syndrome in a critically ill patient "pseudo"? Hypothesis and supportive case report. *Endocr Pract.* 2007, 3:153-8.
24. Chakrabarty K., Wu W., Booth J.L., Duggan E.S., Coggeshall K.M. Metcalf J .P. Human Lung Innate Immune Response To Bacillus anthracis Spore Infection *Infection and Immunity.*75:3729-38, 2007
25. Langer M., Malykhin A., Maeda K., Chakrabarty K., Williamson K.S., Feasley C.L., West C.M., Metcalf J.P., Coggeshall K.M. Bacillus anthracis peptidoglycan stimulates an inflammatory response in monocytes through the p38 mitogen-activated protein kinase pathway. *PLoS ONE.* 2008;3(11):e3706.
26. Dozmorov M., Wu W, Chakrabarty K., Booth J.L., Hurst R.E., Coggeshall K.M., Metcalf J.P. Gene expression profiling of human alveolar macrophages infected by B. anthracis spores demonstrates TNF-alpha and NF-kappaB are key components of the innate immune response to the pathogen. *BMC Infectious Diseases* 2009, 9:152
27. Wu W., Mehta H., Chakrabarty K., Booth J.L, Duggan E.S, Patel K, Ballard JD, Coggeshall K.M., Metcalf J.P. Resistance of Human Alveolar Macrophages to Bacillus anthracis Lethal Toxin. *J Immunol,* 2009, 183:5799-806.
28. Wu W, Booth JL, Duggan ES, Wu S, Patel KB, Coggeshall KM, Metcalf JP. Innate immune response to H3N2 and H1N1 influenza virus infection in a human lung organ culture model. *Virology.* 2010, 396:178-88.
29. Wu W., Booth J.L, Duggan E.S, Patel K, Coggeshall K.M., Metcalf J.P. Human Lung Innate Immune Cytokine Response to Adenovirus Type 7. *J Gen Virol.* 2010, 91:1155-63.
30. Iyer JK, Khurana T, Langer M., West CM, Ballard JD, Metcalf JP, Merkel TJ, Coggeshall KM. Inflammatory cytokine response to Bacillus anthracis peptidoglycan requires phagocytosis and lysosomal trafficking. *Infect Immun.* 2010, 78:2418-28.
31. Wu S, Patel KB, Booth LJ, Metcalf JP, Lin HK, Wu W. Protective essential oil attenuates influenza virus infection: an in vitro study in MDCK cells. *BMC Complement Altern Med.* 2010; 10: 69.
32. Wu S, Metcalf JP, Wu W. Innate response to influenza virus. *Curr Opin Infect Dis.* 2011, 24:235- 40.
33. Gregory SM, Nazir SA, Metcalf JP. Implications of the innate immune response to adenovirus and adenoviral vectors. *Future Virology.* 2011, 6: 357-74.
34. Wu W, Patel KB, Booth JL, Zhang W, Metcalf JP. Cigarette smoke extract suppresses the RIG-I initiated immune response to influenza infection in human lung. *Am J Physiol Lung Cell Mol Physiol.* 2011:300:L821-30.
35. Sun D, Raisley B, Langer M, Iyer JK, Vedham V, Ballard JL, James JA, Metcalf JP, Coggeshall KM. Anti-peptidoglycan antibodies and fcy receptors are the key mediators of inflammation in grampositive sepsis. *J Immunol.* 2012:189:2423-3. PMID:PMC3424298
36. Langer M, Duggan ES, Booth JL, Patel VI, Zander RA, Silasi-Mansatb R, Ramanic V, Veres TZ, Prenzler F, Sewald K, Williams DM, Coggeshall KM, Awasthi S, Lupu F, Burian D, Ballard JD, Braun A, Metcalf JP. Bacillus anthracis lethal toxin reduces human alveolar epithelial barrier function. *Infect Immun* 2012, 80:4374-87. PMID:PMC3497415

37. Wu W, Zhang W, Booth JL, Metcalf JP. Influenza A(H1N1)pdm09 Virus Suppresses RIG-I Initiated Innate Antiviral Responses in the Human Lung. PLoS One. 2012;7:e49856. PMID:PMC3503992
38. Coggeshall KM, Lupu F, Ballard J, Metcalf JP, James JA, Farris D, Kurosawa S. The sepsis model:an emerging hypothesis for the lethality of inhalation anthrax. 2013. June 7. J Cell Mol Med.
39. N-Acetylcysteine Protection in COPD: An Alternative Mechanism of Action. Wu W, Awab A, Metcalf JP. Chest. 2014 Jan;145(1):193-4.