BIOGRAPHICAL SKETCH

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NAME: Richard B. Moss

eRA COMMONS USER NAME (credential, e.g., agency login): rbmsumc

POSITION TITLE: Emeritus Professor of Pediatrics, Stanford University

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE	Completion Date	FIELD OF STUDY
Columbia College, New York, NY	B.A.	06/1971	Liberal Arts (Political Science)
SUNY Downstate Medical Center, New York, NY	M.D.	06/1975	Medicine
Northwestern University, Chicago, IL	Residency	6/1977	Pediatrics
Stanford University, Stanford, CA	Fellowship	6/2018	Allergy-Immunology, Pulmonology

A. Personal Statement

I have conducted bench, translational and clinical research since the mid-1980's. My group joined the first cohort of the Cystic Fibrosis Foundation's Therapeutics Development Network in 1998, where I was the first chair of its protocol review committee. I ran a wet lab at Stanford for 25 years (until 2005) with continuous funding. I was initial Co-Director of Stanford's Children's Health Research Program; with Stanford's CTSA award I became a member of the Spectrum Child Health Executive Committee. I was director of Stanford allergy-immunology and pediatric pulmonology fellowship training programs, and have been Chief of both these divisions in the Department of Pediatrics at Stanford. I am a member of the Stanford Pediatrics Mentoring Group, supporting trainees and faculty in career development, and am a member of the Stanford University School of Medicine IRB. My publications have garnered >15,000 citations. My research in recent years has focused on novel therapeutics and outcome measures in cystic fibrosis, and allergic fungal lung disease with internationally recognized expertise in bronchopulmonary aspergillosis.

1. Moss RB. Treatment options in severe fungal asthma and allergic bronchopulmonary aspergillosis. *Eur Respir J* 43:1487-1500, 2014.
2. Moss RB, Flume PA, Elborn JS, Cooke J, Rowe SM, McColley SA, Rubenstein RC, Higgins M. Efficacy and safety of ivacaftor treatment in patients with cystic fibrosis who have an R117H mutation. *Lancet Resp Med* 3:524-33, 2015.
3. Tracy MC, Foley EA, Okorie CUA, Moss RB. Allergic bronchopulmonary aspergillosis. *J Fungi* 2:17-35, 2016.
4. Tracy MC, Moss RB. The myriad challenges of respiratory fungal infection in cystic fibrosis. *Pediatr Pulmonol* 53: S75-S85, 2018.
5. Nichols D, Moss RB. Early aspergillosis in cystic fibrosis and air trapping: guilt by association? *Am J Respir Crit Care Med* 201;644-645, 2020.

B. Positions and Honors

Positions and Employment

1981-1988 Assistant Professor of Pediatrics, Stanford University School of Medicine Associate
1988-1994 Professor of Pediatrics, Stanford University School of Medicine
1994-2010 Professor of Pediatrics, Stanford University School of Medicine
2010- Professor of Pediatrics Emeritus, Stanford University School of Medicine

Other Experience and Professional Memberships

1985-2005	Director, Allergy Reference Laboratory & Ross Mosier Laboratory for Cystic Fibrosis Research, Packard Children's Hospital at Stanford
1989-95, 2005-2010	Director, Stanford Allergy-Immunology Fellowship Training Program
1991-2009	Director, Stanford Cystic Fibrosis Center
1991-95, 2004-05	Chief, Division of Allergy-Immunology & Pulmonary Medicine, Department of Pediatrics, Stanford University Medical School

1994-1995	NHBLI Asthma and Tuberculosis Academic Awards, Special Emphasis Panels
1995-2004	Chief, Division of Pediatric Pulmonology, Dept. of Pediatrics, Stanford University Medical School
1996	Consultant, Committee to Study Priorities for Vaccine Development, Institute of Medicine/ National Academy of Sciences
1996	NIH DRG Biological and Physiological Sciences Special Emphasis Panel
2002	NIH NCRR GCRC Site Review Panel
1989, 2003	Plenary Address, North American Cystic Fibrosis Conference
2003-2005	Chair, Therapeutics Development Network Protocol Review Committee
2005	American Pediatric Society
2010	NHLBI Special Emphasis Panel, Clinical Trials of Novel Therapy for Lung Diseases

Honors

1974	Alpha Omega Alpha Honor Medical Society
1980-1982	American Lung Association Training Fellowship
1980-1981	California Thoracic Society Medical Research Award
2003	Professional of the Year, Cystic Fibrosis Research, Inc.
2018	William J Martin II Distinguished Achievement Award, American Thoracic Society

C. Contributions to Science

1. My early research focused on issues in adaptive immune responses, primarily in two settings: chronic lung infection in cystic fibrosis, and natural and therapeutic responses to allergens in atopic asthma. I was one of the first investigators to point to chronic inflammation as a critical component of CF and identify biomarkers of progression. I investigated allergic drug responses and described one of the first desensitization approaches in CF. I described immune responses to allergen immunotherapy and chronic infection with a focus on induction of isotypic blocking antibodies.
    A. Moss RB, Lewiston NJ. Immune complexes and humoral response to Pseudomonas aeruginosa in cystic fibrosis. *Am Rev Respir Dis* 121:23-29, 1980.
    B. Moss RB, Babin S, Blessing J, et al. Allergy to semisynthetic penicillins in cystic fibrosis. *J Pediatr* 104:460-466, 1984.
    C. Moss RB, Hsu YP, Lewiston NJ, et al. Association of systemic immune complexes, complement activation, and antibodies to Pseudomonas aeruginosa lipopolysaccharide and exotoxin A with mortality in cystic fibrosis. *Am Rev Respir Dis* 133:648-652, 1986.
    D. Eichler I, Joris L, Hsu YP, Van Wye J, Bram R, Moss RB. Nonopsonic antibodies in cystic fibrosis: Pseudomonas aeruginosa lipopolysaccharide-specific antibodies from infected patients inhibit neutrophil oxidative responses. *J Clin Invest* 84:1794-1804, 1989.
    E. Moss RB**.** Mucosal humoral immunity in cystic fibrosis – a tangled web of failed proteostasis, infection and adaptive immunity. *EBioMedicine* 60:102974, 2020.

2. I became increasingly interested in T cell responses in CF. We described CFTR expression in lymphocytes, cloned T cells for *ex vivo* study, and described lymphocyte cytokine dysregulation. I posited CF (before the discovery and description of T17 and Treg subsets) as a Th2 immune deviation disease.
    A. Moss R, Bocian R, Hsu Y-P, Yssel H. Is CF a T_H2 immunoinflammatory disease? *Pediatr Pulmonol* Suppl 9:289, 1993.
    B. Moss RB, Bocian RC, Hsu YP, et al. Reduced interleukin-10 secretion by CD4+ T lymphocytes expressing mutant CFTR. C*lin Exp Immunol* 106: 374-388, 1996.
    C. Moss RB, Hsu YP, Olds L. Cytokine dysregulation in activated cystic fibrosis peripheral lymphocytes. *Clin Exp Immunol* 120: 518-525, 2000.

3. With Professor William Northway I characterized the long-term outcome of bronchopulmonary dysplasia.
    A. Northway WH, Moss RB, Carlisle KB, et al. Late pulmonary sequelae of bronchopulmonary dysplasia. *N Engl J Med* 26:1793-1799, 1990. (613 citations)
    B. Howling SJ, Northway WH Jr, Hansell DM, Moss RB, et al. Pulmonary sequelae of bronchopulmonary dysplasia survivors: high-resolution CT findings. AJR Am J Roentgenol 174:1323-1326, 2000.

4. With the advent of specific CF therapeutics, I became involved in many translational clinical trials including gene therapy, cytokine immunomodulators, biologics, and small molecules including the first study to show CFTR potentiation.
    A. Van Wye JE, Collins MS, Baylor M, Pennington JE, Hsu YP, Sampanvejsopa V, Moss RB. Pseudomonas hyperimmune globulin passive immunotherapy for pulmonary exacerbations in cystic fibrosis. *Pediatr Pulmonol* 9:7-18, 1990.
    B. Moss RB, Rodman D, Spencer LT, et al. Repeated AAV2 aerosol-mediated CFTR gene transfer to the lungs of patients with cystic fibrosis: a multicenter, double-blind, placebo controlled trial. *Chest* 125:509- 521, 2004. (419 citations)

C. Ramsey BW, Plant B, Davies J, Tullis E, Bell S, Dřevínek P, Griese M, Konstan M, Moss R, et al. A CFTR potentiator in patients with cystic fibrosis and the G551D mutation. *N Engl J Med* 365:1663-1672, 2011. (1,652 citations)
D. Moss RB, Flume PA, Elborn JS, Cooke J, Rowe SM, McColley SA, Rubenstein RC, Higgins M. Efficacy and safety of ivacaftor treatment in patients with cystic fibrosis who have an R117H mutation. *Lancet Resp Med* 3:524-33, 2015.
E. Pilewski J, De Boeck C, Nick J, Shilling R, Tian S, DeSouza C, Higgins M, Moss RB. Long-term ivacaftor in people aged 6 years and older with cystic fibrosis with ivacaftor-responsive mutations. *Pulm Ther* 6:303-313, 2020.

5. More recently I have become interested in fungal immunomodulation, polymicrobial infection, and the problems of allergic fungal lung disease. I developed a new diagnostic test for allergic bronchopulmonary aspergillosis based on the flow cytometric basophil activation test.
   A. Stevens DS, Moss R, Kurup VP, et al. Allergic bronchopulmonary aspergillosis in cystic fibrosis. CFF Consensus Conference. *Clin Infect Dis* 37 (Suppl 3):S225-S264, 2003. (656 citations)
   B. Ferreira JAG, Penner JC, Moss RB, et al. Pseudomonas aeruginosa inhibition of Aspergillus fumigatus and its biofilm is dependent on the source, phenotype and growth conditions of the bacterium. *PLoS One* 10:e0134692, 2015.
   C. Gernez Y, Waters J, Dunn C, Davies Z, Everson C, Silver E, Wallenstein S, Herzenberg LA, Moss RB. Blood basophil activation is a reliable biomarker of allergic bronchopulmonary aspergillosis in cystic fibrosis. *Eur Resp J* 47:177-85, 2016
   D. Mirković B, Lavelle GM, Azim AA, Helma K, Gargoum FS, Molloy K, Gernez Y, Dunne K, Murphy P, Moss RB, Greene CM, Gunaratnam C, Chotirmall SH, McElvaney NG. The basophil surface marker CD203c identifies *Aspergillus* sensitization in cystic fibrosis. *J Allergy Clin Immunol* 137:436-43.e9, 2016.
   E. Li B, Huh SM, Prieto MD, Hong G, Schwarz C, Moss RB, Quon BS. Biomarkers for the diagnosis of allergic bronchopulmonary aspergillosis in cystic fibrosis: a systemic review and meta-analysis. *J Allergy Clin Immunol Pract* 9:1909-1930, 2021.
   F. Moss RB. Diagnosing allergic bronchopulmonary aspergillosios/mycosis: Return to lost horizons. *J Alllergy Clin Immunol* 147:1212-1214, 2021.

Published Work Referenced in PubMed MyBibliography:
https://www.ncbi.nlm.nih.gov/sites/myncbi/1n7Xm5UHYcm5yH/bibliography/56167622/public/?sort=date&direction=ascending.

D. Research Support

Ongoing Research Support – None