

# CURRICULUM VITAE FOR ACADEMIC PROMOTION

The Johns Hopkins University School of Medicine

May 1, 2019

---

Stephen C. Mathai

## DEMOGRAPHIC AND PERSONAL INFORMATION

### Current Appointments

2016-present Associate Professor of Medicine, Division of Pulmonary and Critical Care, Johns Hopkins University School of Medicine, Baltimore, MD

### Personal Data

Division of Pulmonary and Critical Care Medicine  
Johns Hopkins University School of Medicine  
1830 East Monument Street 5<sup>th</sup> Floor  
Baltimore, MD 21205  
Phone: (410) 614-1648  
Fax: (410) 614-7451  
Email: smathai4@jhmi.edu

### Education and Training

#### Undergraduate

1990-1994 BA, Biology, Rutgers College, New Brunswick, NJ

#### Doctoral/graduate

1995-1999 MD, Jefferson Medical College, Philadelphia, PA

#### Postdoctoral

1999-2000 Intern, Internal Medicine, Thomas Jefferson University Hospital, Philadelphia, PA  
2000-2002 Resident, Internal Medicine, Thomas Jefferson University Hospital, Philadelphia, PA  
2002-2003 Chief Medical Resident, Internal Medicine, Thomas Jefferson University Hospital, Philadelphia, PA  
2003-2005 MHS, Clinical Investigation, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD  
2003-2008 Fellow, Division of Pulmonary and Critical Care Medicine, Johns Hopkins University School of Medicine, Baltimore, MD

### Professional Experience

2002-2003 Instructor of Medicine, Internal Medicine, Thomas Jefferson University Hospital, Philadelphia, PA  
2003-2007 Intensivist, Critical Care Medicine, Greater Baltimore Medical Center, Baltimore, MD  
2008-2009 Instructor of Medicine, Pulmonary and Critical Care Medicine, Johns Hopkins University School of Medicine, Baltimore, MD  
2009-2016 Assistant Professor, Pulmonary and Critical Care Medicine, Johns Hopkins University School of Medicine, Baltimore, MD

### Publications:

#### Original Research [OR]

1. Girgis RE, **Mathai SC**, Krishnan JA, Wigley FM, Hassoun PM. Long term outcome of bosentan treatment in idiopathic pulmonary arterial hypertension and pulmonary arterial hypertension associated with the scleroderma spectrum of diseases. *J Heart Lung Transplant* 2005; 24(10):1626-31. PMID: 16210140

2. Fisher MR, **Mathai SC**, Champion HC, Girgis RE, Houston-Harris T, Hummers L, Krishnan JA, Wigley FM, Hassoun PM. Clinical differences between idiopathic and scleroderma related pulmonary hypertension. *Arthritis Rheum*. 2006 Aug 31;54(9):3043-3050. PMID: 16947776
3. Forfia PR, Fisher MR, **Mathai SC**, Houston-Harris T, Hemnes AR, Borlaug BA, Chamera E, Corretti MC, Champion HC, Girgis RE, and Hassoun PM. Tricuspid annular displacement predicts right ventricular function and survival in PAH. *Am J Respir Crit Care Med* 2006; 174(9):1034-1041. PMID: 16888289
4. **Mathai SC**, Girgis RE, Fisher MR, Champion HC, Houston-Harris T, Zaiman A, and Hassoun PM. Addition of sildenafil to bosentan therapy in the treatment of pulmonary arterial hypertension. *Eur Respir J* 2007; 29(3):469-475. PMID: 17079256
5. Grigoryev DN, **Mathai SC**, Fisher MR, Girgis RE, Zaiman AL, Cheadle C, Hummers L, Garcia JGN, Barnes KC, Wigley FM, Hassoun PM. Identification of candidate genes in scleroderma-associated pulmonary arterial hypertension. *Transl Res* 2008; 151(4):197-207. PMID: 18355767
6. Forfia PR, **Mathai SC**, Fisher MR, Houston-Harris T, Hemnes AR, Champion HC, Girgis RE, Hassoun PM. Hyponatremia predicts right heart failure and poor survival in pulmonary arterial hypertension. *Am J Respir Crit Care Med* 2008; 177(12):1364-9. PMID: 18356560
7. Krishnan V, McCormack MC, **Mathai SC**, Agarwal S, Richardson B, Horton MR, Polito AJ, Collop NA, Danoff SK. Sleep quality and health-related quality of life in idiopathic pulmonary fibrosis. *Chest* 2008; 134:693-8. PMID: 18625669
8. Tedford RJ, Hemnes AR, Russell SD, Wittstein IS, Mahmud M, Zaiman A, **Mathai SC**, Thiemann D, Hassoun PM, Girgis RE, Orens JB, Yuh D, Conte JV, and Champion HC. PDE5A inhibitor sildenafil reverses fixed elevated PVR in end stage left sided heart failure allowing for potential cardiac transplantation. *Circ Heart Fail* 2008; 1:213-9. PMID: 19808294
9. **Mathai SC**, Houston-Harris T, Hummers LK, Wigley FM, Zaiman A, Champion HC, Hassoun PM, and Girgis RE. Survival in pulmonary hypertension associated with the scleroderma spectrum of diseases: impact of interstitial lung disease. *Arthritis Rheum* 2009; 60:569-77. PMID: 19180517
10. **Mathai SC**, Bueso M, Hummers LK, Boyce D, Lechtzin N, LePavec J, Ezquibela AC, Champion HC, Houston T, Forfia PR, Zaiman AL, Wigley FM, Girgis RE, Hassoun PM. Disproportionate elevation of NT-proBNP in scleroderma-related pulmonary hypertension. *Eur Respir J* 2010; 35:94-104. PMID: 19643943
11. Campo AE, **Mathai SC**, Zaiman AL, Boyce D, Champion HC, Le Pavec J, Hummers LK, Lechtzin N, Wigley FM, Girgis RE, Hassoun PM. Hemodynamic predictors of survival in scleroderma-related pulmonary arterial hypertension. *Am J Respir Crit Care Med* 2010; 182:252-260. PMID: 20339143
12. Le Pavec J, Girgis RE, Lechtzin N, **Mathai SC**, Launay D, Hummers LK, Zaiman A, Sitbon O, Simonneau G, Humbert M, Hassoun PM. Systemic sclerosis related pulmonary hypertension associated with interstitial lung disease: Impact of pulmonary arterial hypertension therapies. *Arthritis Rheum* 2011; 63:2456-64. PMID: 21538327
13. **Mathai SC\***, Sibley CT, Forfia PR, Mudd JO, Fisher MR, Tedford RJ, Lechtzin N, Boyce D, Hummers LK, Houston T, Zaiman AL, Girgis RE, Hassoun PM. Tricuspid annular plane systolic excursion is a robust outcome measure in scleroderma-associated pulmonary arterial hypertension. *J Rheum* 2011; 38:2410-8. PMID: 21965638; corresponding author
14. Campo A, **Mathai SC**, Le Pavec J, Zaiman AL, Hummers LK, Boyce D, Houste T, Lechtzin N, Chami H, Girgis RE, Hassoun PM. Outcomes of hospitalization for right heart failure in pulmonary arterial hypertension. *Eur Respir J* 2011; 38:359-67. PMID: 21310884
15. Vogel-Claussen J, Shehata ML, Lossnitzer D, Skrok J, Singh S, Boyce D, Lechtzin N, Girgis RE, **Mathai SC**, Lima JA, Bluemke DA, Hassoun PM. Increased right ventricular septomarginal trabeculation mass is a novel marker for pulmonary hypertension: comparison with ventricular mass index and right ventricular mass. *Invest Radiol* 2011;46:567-75. PMID: 21577127
16. Vogel-Claussen J, Skrok J, Shehata ML, Singh S, Sibley CT, Boyce DM, Lechtzin N, Girgis RE, **Mathai SC**, Goldstein TA, Zheng J, Lima JA, Bluemke DA, Hassoun PM. Right and left ventricular myocardial perfusion reserves correlate with right ventricular function and pulmonary hemodynamics in patients with pulmonary arterial hypertension. *Radiology* 2011;258:119-27. PMID: 20971775
17. Shehata ML, Lossnitzer D, Skrok J, Boyce D, Lechtzin N, **Mathai SC**, Girgis RE, Osman N, Lima JA, Bluemke DA, Hassoun PM, Vogel-Claussen J. Myocardial delayed enhancement in pulmonary hypertension: pulmonary hemodynamics, right ventricular function, and remodeling. *AJR Am J Roentgenol* 2011;196:87-94. PMID: 21178051
18. Tedford RJ, Hassoun PM, **Mathai SC**, Girgis RE, Russell SD, Thiemann DR, Cingolani OH, Mudd JO, Borlaug BA, Redfield MM, Lederer DJ, Kass DA. Pulmonary capillary wedge pressure augments right ventricular pulsatile loading. *Circulation* 2012;125:289-97. PMID: 22131357

19. Said Q, Martin BC, Joish VN, Kreilick C, **Mathai SC**. The cost to managed care of managing pulmonary hypertension. *J Med Econ* 2012; 15:500-8. PMID: 22313330
20. Cheadle C, Berger AE, **Mathai SC**, Grigoryev DN, Watkins T, Sugawara Y, Barkataki S, Fan J, Boorgula M, Hummers LK, Zaiman AL, Girgis RE, McDevitt MA, Johns RA, Wigley FM, Barnes KC, Hassoun PM. Erythroid-specific transcriptional changes in PBMCs from pulmonary hypertension patients. *PLoS One* 2012; 7:e34951. PMID: 22545094
21. Skrok J, Shehata ML, **Mathai SC**, Girgis RE, Zaiman A, Mudd JO, Boyce D, Lechtzin N, Lima JS, Bluemke DA, Hassoun PM, Vogel-Claussen J. Pulmonary arterial hypertension: MR imaging-derived first-pass bolus kinetic parameters are biomarkers for pulmonary hemodynamics, cardiac function, and ventricular remodeling. *Radiology* 2012;263:678-87. PMID: 22509050
22. **Mathai SC\***, Puhan MA, Lam D, Wise RA. The minimal important difference in the six minute walk test for patients with pulmonary arterial hypertension. *Am J Respir Crit Care Med* 2012;186:428-33. PMID: 22723290; corresponding author
23. Shehata ML, Harouni AA, Skrok J, Basha TA, Boyce D, Lechtzin N, **Mathai SC**, Girgis RE, Osman NF, Lima JA, Bluemke DA, Hassoun PM, Vogel-Claussen J. Regional and global biventricular function in pulmonary arterial hypertension: A cardiac MR imaging study. *Radiology* 2013;266:114-22. PMID: 23151825
24. Yarmus Y, Akulian J, Gilbert C, **Mathai SC**, Sahetya S, Harris K, Gillespie C, Hass A, Feller-Kopman D, Serman D, Lee HJ. Comparison of moderate vs. deep sedation for endobronchial ultrasound transbronchial needle aspiration. *Ann Am Thorac Soc* 2013;10:121-126. PMID: 23607840
25. Tedford RJ, Mudd, JO, Girgis RE, **Mathai SC**, Zaiman AL, Houston-Harris T, Boyce D, Shah AA, Hummers LK, Wigley FM, Russell SD, Saggarr R, Saggarr R, Hassoun PM, Kass DA. Right ventricular dysfunction in systemic sclerosis associated pulmonary arterial hypertension. *Circ Heart Fail* 2013;6:953-63. PMID: 23797369
26. Khanna D, Gladue H, Channick R, Chung L, Distler O, Furst DE, Humbert M, Langleben D, **Mathai SC**, Saggarr R, Visovatti S, Altorok N, Townsend W, Fitzgerald J, McLaughlin VV. Recommendations for screening and detection of connective-tissue disease associated pulmonary arterial hypertension. *Arthritis Rheum* 2013;65:3194-201. PMID: 24022584
27. Bonner N, Abetz L, Meunier J, Sikirica M, **Mathai SC**. Development and validation of the Living with Pulmonary Hypertension Questionnaire in pulmonary arterial hypertension patients. *Health Qual Life Outcomes* 2013;11:161. PMID: 24088389
28. Tedford RJ, Beatty CA, **Mathai SC**, Kolb TM, Damico R, Hassoun PM, Leary PJ, Kass DA, Shah AS. Prognostic value of the pre-transplant diastolic pulmonary artery pressure to pulmonary capillary wedge pressure gradient (DPG) in cardiac transplant recipients with pulmonary hypertension. *J Heart Lung Transplant* 2014;33:289-97. PMID: 24462554
29. Blanco I, **Mathai SC**, Boyce D, Kolb TM, Chami H, Hummers LK, Houston T, Chaisson N, Zaiman AL, Wigley FM, Tedford RJ, Kass DA, Damico RL, Girgis RE, Hassoun PM. Severity of scleroderma-associated pulmonary arterial hypertension in African Americans. *Medicine*(Baltimore) 2014;93:77-85. PMID: 25181310
30. Fisher A, Swigris JJ, Bolster M, Chung L, Csuka ME, Domsic R, Frech T, Hinchcliff M, Hsu V, Hummers LK, Gombert-Maitland, M, **Mathai SC**, Simms R, Steen VD. Pulmonary hypertension and interstitial lung disease within PHAROS: impact of extent of fibrosis and pulmonary physiology on cardiac hemodynamic parameters. *Clin Exp Rheumatol* 2014;32:S109-114. PMID: PMID: 25372796
31. **Mathai SC\***, Hassoun PM, Puhan MA, Zhou Y, Wise RA. Sex differences in response to tadalafil in pulmonary arterial hypertension. *Chest* 2015;147:188-97. PMID: 252122150; corresponding author
32. Damico R, Kolb TM, Valera L, Wang L, Houston T, Tedford RJ, Kass DA, Rafaels N, Gao L, Barnes KC, Benza RL, Rand JL, Hamid R, Loyd JE, Robbins IM, Hemnes AR, Chung WK, Austin AD, Drummond MB, **Mathai SC**, Hassoun PM. Serum endostatin is a genetically determined predictor of survival in pulmonary arterial hypertension. *Am J Respir Crit Care Med* 2015;191:208-218. PMID: 25489667
33. Matura LA, Ventetuolo CE, Palevsky HI, Lederer DJ, Horn EM, **Mathai SC**, Pinder D, Archer-Chicko C, Bagiella E, Roberts KE, Tracy RP, Hassoun PM, Girgis RE, Kawut SM. Interleukin-6 and tumor necrosis factor-alpha are associated with quality of life-related symptoms in pulmonary arterial hypertension. *Ann Am Thorac Soc* 2015;12:370-5. PMID: 15615959
34. Kelemen BW, **Mathai SC\***, Tedford RJ, Damico RL, Kolb TM, Chaisson NF, Houston R, Zimmerman SL, Kamel IR, Kass DA, Hassoun PM. Right ventricular remodeling in idiopathic and scleroderma associated pulmonary arterial hypertension: Two distinct phenotypes. *Pulm Circ* 2015;5:327-34. PMID: 26064458; co-first author, corresponding author

35. Corona-Villalobos CP, Rastegar N, Kamel, IR, Damico R, Kolb TM, Boyce DM, Sager AS, Skrok J, Shehata ML, Vogel-Clouseen J, Bluemke DA, Girgis RE, **Mathai SC**, Hassoun PM, Zimmerman SL. Bidimensional measurements of right ventricular function for prediction of survival in patients with pulmonary hypertension: comparison of reproducibility and time of analysis with volumetric CMR analysis. *Pulm Circ* 2015; 5(3):527-37. PMID: 26401254
36. Yin LX, Reh DD, Hoag JB, Mitchell SE, **Mathai SC**, Robinson GM, Merlo CA. The minimal important difference of the epistaxis severity score in hereditary hemorrhagic telangiectasia. *Laryngoscope* 2015 (epub ahead of print). PMID: 26393959
37. Hassoun PM, Zamanian RT, Damico R, Lechtzin N, Khair R, Kolb TM, Tedford RJ, Hulme OL, Houston T, Pisanello C, Sato T, Pullins EH, Corona-Villalobos CP, Zimmerman SL, Gashouta MA, Minai OA, Torres F, Girgis RE, Chin K, **Mathai SC**. Ambrisentan and tadalafil upfront combination therapy in scleroderma-associated PAH. *Am J Respir Crit Care Med* 2015; 192(9):1102-10. PMID: 26360334
38. Gao Li, Emond MJ, Louie T, Cheadle C, Berger AE, Rafaels N, Vergara C, Kim Y, Taub MA, Ruczinski I, **Mathai SC**, Rich SS, Nickerson DA, Hummers LK, Bamshad MJ, Hassoun PM, Mathias RA, Barnes KC. Whole-exome sequencing identifies rare variants in ATP8B4 as a risk factor for systemic sclerosis. *Arthritis Rheum* 2016; 68(1):191-200. PMID: 26473621
39. **Mathai SC\***, Suber T, Khair RM, Kolb TM, Damico RL, Hassoun PM. Health-related quality of life and survival in pulmonary arterial hypertension. *Ann Am Thorac Soc* 2016; 13(1):31-9. PMID: 26492065; corresponding author
40. Lammi M, **Mathai SC\***, Saketoo L, Domsic R, Bojanowski C, Fust D, Steen V. Initial therapy with an endothelin receptor antagonist is associated with worse outcomes in patients with systemic sclerosis and pulmonary arterial hypertension: Observations from the PHAROS cohort. *Arthritis Rheumatol* 2015 (epub ahead of print). PMID: 26479414; co-first author
41. Stewart T, Caffrey DG, Gilman RH, **Mathai SC**, Lerner A, Hernandez A, Pinto ME, Huaylinos Y, Cabrera L, Wise RA, Miranda JJ, Checkley W. Can a simple test of functional capacity add to the clinical assessment of diabetes? *Diabet Med* 2015 (epub ahead of print). PMID: 26599981
42. Al-Naamani N, Palevsky HI, Lederer DJ, Horn EM, **Mathai SC**, Toberts KE, Tracy RP, Hassoun PM, Girgis RE, Shimbo D, Post WS, Kawut SM; ASA-STAT Study Group. Prognostic significance of biomarkers in pulmonary arterial hypertension. *Ann Am Thorac Soc* 2016; 13(1):25-30. PMID: 26501464
43. Khair RM, Nwaneri C, Damico RL, Kolb TM, Hassoun PM, **Mathai SC\***. The minimal important difference in the Borg dyspnea score for patients with pulmonary arterial hypertension. *Ann Am Thorac Soc* 2016;13:842-849. PMID 26974862; corresponding author
44. Hsu S, Houston BA, Tampakakis E, Bacher AC, Rhodes PS, **Mathai SC**, Damico RL, Kolb TM, Hummers LK, Shah AA, McMahan Z, Corona-Villalobos CP, Zimmerman SL, Wigley FM, Hassoun PM, Kass DA, Tedford RJ. Right ventricular functional reserve in pulmonary arterial hypertension. *Circulation* 2016;133:2413-22. PMID:27169739
45. Zamanian RT, Levine DJ, Bourge RC, DeSouza SA, Rosenzweig EB, Alnuaimat H, Burger C, **Mathai SC**, Leedom N, DeAngelis K, Lim A, DeMarco T. An observational study of inhaled treprostinil respiratory-related safety in patient with pulmonary arterial hypertension. *Pulm Circ* 2016;6:329-37. PMID:27683610
46. Metkus T, Tampakakis E, Mullin C, Houston B, Kolb T, **Mathai SC**, Damico R, Maron B, Hassoun P, Brower R, Tedford R. Pulmonary arterial compliance in ARDS: clinical determinants and association with outcome from the FACTT cohort. *Crit Care Med* 2017; 45(3):422-429. PMID:27941369
47. **Mathai SC\***, Minai O, Sullivan SD, Lerner D, Levine D. Rationale and study design of MOTION: A phase 4, prospective, single-arm, open-label study to measure outcomes in patients with pulmonary arterial hypertension not on active treatment. *Respir Med* 2017;122 (supp):S23-27. PMID:27890471; corresponding author
48. Metkus TS, Mullin CJ, Grandin EW, Rame JE, Tampakakis E, Hsu S, Kolb TM, Damico R, Hassoun PM, Kass DA, **Mathai SC**, Tedford RJ. Heart rate dependence of the pulmonary resistance x compliance (RC) time and impact of right ventricular load. *PLoS One* 2016;11:e0166463. PMID: 27861600
49. Cao Z, **Mathai SC**, Hummers LK, Shah AA, Wigley RM, Lechtzin N, Hassoun PM, Girgis RE. Exhaled nitric oxide in pulmonary arterial hypertension associated with systemic sclerosis. *Pulm Circ* 2016; 6(4):545-550. PMID:28090297
50. Hsu S, Brusca SB, Rhodes PS, Kolb TM, **Mathai SC**, Tedford RJ. Use of thermodilution cardiac output overestimates diagnoses of exercise-induced pulmonary hypertension. *Pulm Circ* 2017; 7(1):253-255. PMID:28680584

51. Bourji KI, Kelemen BW, **Mathai SC**, Damico RL, Kolb TM, Cozzi F, Tedford RJ, Hassoun PM. Poor survival in patients with scleroderma and pulmonary hypertension due to heart failure with preserved ejection fraction. *Pulm Circ* 2017;7(2):409-420. PMID: 28597765
52. Newman JH, Rich S, Abman SH, Alexander JH, Barnard J, Beck GJ, Benza RL, Bull TM, Chan SY, Chun HJ, Doogan D, Dupuis J, Erzurum SC, Frantz RP, Geraci M, Gillies H, Gladwin M, Gray MP, Hemnes AR, Herbst RS, Hernandez AF, Hill NS, Horn EM, Hunter K, Jing Z, Johns R, Kaul S, Kawut SM, Lahm T, Leopold JA, Lewis GD, **Mathai SC**, McLaughlin VV, Michelakis ED, Nathan SD, Nichols W, Page G, Rabinovitch M, Rich J, Rishard F, Rounds S, Shah SJ, Tapon VF, Lowy N, Stockbridge N, Weinmann G, Xiao L. Enhancing insights into pulmonary vascular disease (PVD) through a precision medicine approach. A Joint NHLBI-CMREF Workshop Report. *Am J Respir Crit Care Med* 2017; 195(12):1661-1670. PMID: 28430547
53. Mercurio V, Mukherjee M, Tedford RJ, Zamanian RT, Khair RM, Sato T, Minai OA, Torres F, Girgis RE, Chin K, Damico R, Kolb TM, **Mathai SC**, Hassoun PM. Improvement in right ventricular strain with ambrisentan and tadalafil upfront therapy in scleroderma pulmonary arterial hypertension. *Am J Respir Crit Care Med* 2017 (in press) PMID: 28661697
54. Mazurek JA, Vaidya A, **Mathai SC**, Roberts JD, Forfia PR. Follow-up tricuspid annular plane systolic excursion predicts survival in pulmonary arterial hypertension. *Pulm Circ* 2017;7(2):361-371. PMID:28597759
55. Mullin CJ, Hsu S, Amancherla K, Wand A, Rhodes P, Leary PJ, Mukherjee M, Damico RL, Kolb TM, **Mathai SC**, Hassoun PM, Tedford RJ. Evaluation of criteria for exercise-induced pulmonary hypertension in patients with resting pulmonary hypertension. *Eur Respir J* 2017;50:pii:1700784 PMID:28931665
56. Mukherjee M, Mercurio V, Tedford RJ, Shah A, Hsu S, Mullin CJ, Sato T, Damico RL, Kolb TM, **Mathai SC**, Hassoun PM. Right ventricular longitudinal strain is diminished in systemic sclerosis compared to idiopathic pulmonary arterial hypertension. *Eur Respir J* 2017;50(5):pii1701436 (in press) PMID 29167303
57. Hemnes AR, Beck GJ, Newman JH, Abidov A, Aldred MA, Barnard J, Berman Rosenzweig E, Borlaug BA, Chung WK, Comhair SAA, Erzurum SC, Frantz RP, Gray MP, Grunig G, Hassoun PM, Hill NS, Horn EM, Hu B, Lemple JK, Maron BA, **Mathai SC**, Olman MA, Rishard RP, Systrom DM, Tang WHW, Waxman AB, Xiao L, Yuan JX, Leopold JA; PVDOMICS Study Group. PVDOMICS: A Multi-center study to improve understanding of pulmonary vascular disease through phenomics. *Circ Res* 2017; 1212(10)1136-1139. PMID:29074534
58. Talwar A, Garcia JGN, Tsai H, Moreno M, Lahm T, Zamanian RT, Machado R, Kawut SM, Selej M, **Mathai SC**, D'Anna LH, Sahni S, Rodriguez EJ, Channick R, Fagan K, Gray M, Armstrong J, Rodriguez Lopez J, de Jesus Perez V; Pulmonary Circulation Assembly. Health disparities in patients with pulmonary arterial hypertension: a blueprint for action. An Official American Thoracic Society Statement. *Am J Respir Crit Care Med* 2017; 196(8):e32-47. PMID:29028375
59. Sato T, Ambale-Venkatesh B, Lima JAC, Zimmerman SL, Tedford RJ, Fujii T, Hulme OL, Pullins EH, Corona-Villalobos CP, Zamanian TR, Minai OA, Girgis RE, Chin K, Khair R, Damico RL, Kolb TM, **Mathai SC**, Hassoun PM. The impact of ambrisentan and tadalafil upfront combination therapy on cardiac function in scleroderma associated pulmonary arterial hypertension patients: cardiac magnetic resonance feature tracking study. *Pulm Circ* 2018;8:2045893217748307. PMID:29251556
60. Hsu S, Kokkonen-Simon KM, Kirk JA, Kolb TM, Damico RL, **Mathai SC**, Mukherjee M, Shah AA, Wigley FM, Marguiles KB, Hassoun PM, Halushka MK, Tedford RJ, Kass DA. Right ventricular myofibrillar functional differences in humans with systemic sclerosis-associated versus idiopathic pulmonary arterial hypertension. *Circulation* 2018;117.033147. PMID:29352073.
61. Elinoff JM, Agarwal R, Barnett CT, Benza RL, Cuttica MJ, Gharib AM, Gray MP, Hassoun PM, Hemnes A, Humbert M, Kolb TM, Lahm T, Leopold JA, **Mathai SC**, McLaughlin VV, Preston IR, Rosenzweig EB, Shlobin OA, Steen VD, Zamanian RT, Solomon MA. Challenges in pulmonary hypertension: Controversies in treating the tip of the iceberg. A joint national institutes of health clinical center and pulmonary hypertension association symposium report. *Am J Respir Crit Care Med* 2018;10.1164; PMID:29425462
62. Mercurio V, Peloquin G, Bourji KI, Diab N, Sato T, Enobun B, Houston Harris R, Damico R, Kolb TM, **Mathai SC**, Tedford RJ, Tocchetti CG, Hassoun P. Pulmonary arterial hypertension and atrial arrhythmias: incidence, risk factors, and clinical impact. *Pulm Circ* 2018; epub before print. PMID:29575972
63. Tampakakis E, Shah SJ, Borlaugh BA, Leary PJ, Patel HH, Miller WL, Kelemen BW, Houston BA, Kolb TM, Damico R, **Mathai SC**, Kasper EK, Hassoun PM, Kass DA, Tedford RJ. Pulmonary effective arterial elastance as a measure of right ventricular afterload and its prognostic value in pulmonary hypertension due to left heart disease. *Circ Heart Fail*. 2018;11:e004436. PMID:29643065
64. Machireddy K, Myint Z, Dein E, **Mathai SC**, Seo P, Haque U, Manno R, Timlin H. Mycophenolate mofetil in a lupus patient with pulmonary hypertension. *Cureus* 2018;10:e2121. PMID:2960729

65. Launay D, Montani D, Hassoun PM, Cottin V, Le Pavec J, Clerson P, Sibton O, Jais X, Savale L, Weatherald J, Sobanski V, **Mathai SC**, Shafiq M, Cordier JF, Hachulla E, Simonneau G, Humbert M. Clinical phenotypes and survival of pre-capillary pulmonary hypertension in systemic sclerosis. *PLoS One* 2018; 13:e0197112 PMID:29763468.
66. Lahm T, Douglas IS, Archer SL, Bogaard HJ, Chesler NC, Haddad F, Hemnes AR, Kawut SM, Kline JA, Kolb TM, **Mathai SC**, Mercier O, Micheladis ED, Naeije R, Tudor RM, Ventetuolo CE, Viellard-Baron A, Voeklel NF, Vonk-Noordegraaf A, Hassoun PM. American Thoracic Society Assembly on Pulmonary Circulation. Assessment of right ventricular function in the research setting: Knowledge gaps and pathways forward. An official American Thoracic Society Research Statement. *Am J Respir Crit Care Med* 2018;198:e15-e45. PMID:30109950.
67. Mercurio V, Diab N, Peloquin G, Houston-Harris T, Damico R, Kolb TM, **Mathai SC**, Hassoun PM. Risk assessment in scleroderma patients with newly diagnosed pulmonary arterial hypertension: application of the ESC/ERS risk prediction model. *Eur Respir J* 2018;52:pii.1800497. PMID:30262575
68. Furfaro D, Azadi J, Houston T, Kolb TM, Damico RL, Hassoun PM, Chin K, **Mathai SC**. Discordance between imaging modalities in the evaluation of chronic thromboembolic pulmonary hypertension: A combined experience from two academic medical centers. *Ann Am Thorac Soc* 2018; PMID:30359536
69. Crnkovic S, Egemnazarov B, Damico R, Marsh LM, Nagy VM, Dousdhan P, Atsina K, Kolb TM, **Mathai SC**, Hooper JE, Ghanim B, Kelpetko W, Fruhwald F, Lassner D, Olschewski A, Olschewski H, Hassoun PM, Kwapiszewska G. Disconnect between fibrotic response and right ventricular dysfunction. *Am J Respir Crit Care Med* 2018; PMID: 30557518.
70. Simpson C, Damico R, Kolb TM, **Mathai SC**, Khair RM, Sato T, Bourji K, Tedford R, Zimmerman S, Hassoun PM. Ventricular mass as a prognostic imaging biomarker in incident PAH. *Eur Respir J* 2019 PMID:30705128.
71. Sitbon O, Gomberg-Maitland M, Granton J, Lewis MI, **Mathai SC**, Rainisio M, Stockbridge NL, Wilkins MR, Zamanian RT, Rubin LJ. Clinical trial design and new therapies for pulmonary arterial hypertension. *Eur Respir J* 2019 (epub ahead of print). PMID:30545975
72. **Mathai SC**, Hemnes AR, Manaker S, Anguiano RH, Dean BB, Saundankar V, Classi P, Nelsen AC, Gordon K, Ventetuolo CE. Identifying patients with pulmonary arterial hypertension (PAH) using administrative claims algorithms. *Ann Am Thorac Soc* 2019 (in press). PMID:30865835
73. Mullin CJ, Khair RM, Damico RL, Kolb TM, Hummers LK, Hassoun PM, Steen V, **Mathai SC**. Validation of the REVEAL Prognostic Equation and Risk Score Calculator in Incident Systemic Sclerosis-Associated Pulmonary Arterial Hypertension. *Arthritis Rheum* 2019 (accepted)
74. Simpson CE, Damico RL, Hummers L, Khair RM, Kolb TM, Hassoun PM, **Mathai SC**. Serum uric acid is a marker of disease risk, severity, and survival in systemic sclerosis-related pulmonary arterial hypertension. *Pulm Circ* 2019 PMID: 31384431

#### Review Articles [RA]

1. **Mathai SC**, Girgis RE. Pulmonary hypertension related to respiratory disease. *Clinical Pulmonary Medicine* 2007.
2. Girgis RE, **Mathai SC**. Pulmonary hypertension associated with chronic respiratory disease. *Clin Chest Med*. 2007; 28(1):219-232. PMID: 17338937
3. **Mathai SC**, Hassoun PM. Treatment of pulmonary arterial hypertension. *Hospital Physician Board Review Manual* 2008
4. **Mathai SC**, Hassoun PM. The role of echocardiography in the diagnosis and assessment of pulmonary hypertension. *Journal of the Pulmonary Hypertension Association* Spring 2009.
5. **Mathai SC**, Hassoun PM. Therapy for scleroderma-related pulmonary arterial hypertension. *Curr Opin Rheum* 2009; 21:642-648. PMID: 19667994
6. Le Pavec J, Launay D, **Mathai SC**, Hassoun PM, Humbert M. Scleroderma lung disease. *Clin Rev Allergy Immunol* 2011; 40:104-16. PMID: 20063208
7. Boueiz A, **Mathai SC**, Hummers LK, Hassoun PM. Cardiac complications of systemic sclerosis: recent progress in diagnosis. *Curr Opin Rheumatol* 2010; 22:696-703. PMID: 20657283
8. **Mathai SC**, Hassoun PM. Pulmonary hypertension associated with systemic sclerosis. *Expert Rev Respir Med* 2011;5:267-79. PMID: 21510736
9. **Mathai SC**, Hassoun PM. Pulmonary arterial hypertension in connective tissue diseases. *Heart Fail Clin* 2012;8:413-25. PMID: 22748903
10. **Mathai SC**, Girgis RE. Pulmonary hypertension topics. *Expert Rev Respir Med* 2012;6:503-5. PMID: 23134243
11. Dezube R, Houston T, **Mathai SC**. Post-operative care of the patient with pulmonary hypertension. *Advances in Pulmonary Hypertension*. Fall 2013.

12. **Mathai SC**, Danoff SK. State-of-the-art: Management of Interstitial Lung Disease Associated with Connective Tissue Disease. *BMJ* 2016;352:h6810. PMID: 26912511
13. **Mathai SC**, Ghofrani HA, Mayer E, Pepke-Zaba J, Nikkho S, Simonneau G. Quality of life in patients with chronic thromboembolic disease. *Eur Resp J* 2016;48:526-37. PMID:27076580
14. Divers EC, Platt D, Wang ECY, Lin J, Lingohr-Smith M, **Mathai SC**. A review of clinical trial endpoints of patients with pulmonary arterial hypertension and chronic thromboembolic pulmonary hypertension and how they relate to patient outcomes in the US. *J Manag Care Spec Pharm* 2017;6:545-550. PMID:28090297
15. Benza R, **Mathai S**, Nathan SD. sGC stimulators: evidence for riociguat beyond groups 1 and 4 pulmonary hypertension. *Respir Med* 2017;122 Supp:S28-S34. PMID:27890470
16. Mullin CJ, **Mathai SC**. New insights into the recognition, classification, and management of systemic sclerosis-associated pulmonary hypertension. *Curr Opin Rheum* 2017;29:561-567. PMID:28817465
17. **Mathai SC**, Mathew S. Breathing (and coding?) a bit easier: Changes to international classification of disease coding for pulmonary hypertension. *Chest* 2018;154:207-218. PMID:29684313
18. Essien E, Rali P, **Mathai SC**. Pulmonary embolism. *Med Clin N Am* 2019; in press. PMID:30955521
19. Asano R, **Mathai SC**, Macdonald PS, Newton PF, Currow DC, Phillips J, Yeung WF, Davidson PM. Oxygen use in chronic heart failure to relieve breathlessness: A systematic review. *Heart Fail Rev* 2019. Epub ahead of print PMID:31222538

#### Other Publications:

##### Book Chapters, Monographs [BC]

1. **Mathai SC**. Using Respiratory Waveforms to Adjust Ventilator Settings. In: Handbook of Critical Care. Hogarth K, Hall JB, Schmidt GA, Wood LDH. McGraw-Hill; 2007. p. 289-292.
2. **Mathai SC**, Hummers LK. Pulmonary hypertension associated with connective tissue disease. In: Pulmonary Manifestations of Rheumatic Disease: A Comprehensive Guide. Dellaripa PR, Fisher A, Flaherty KR. Springer 2014. p. 139-166.
3. Khair RM, **Mathai SC**. Pulmonary hypertension in connective tissue disease. In: International Society of Heart Lung Transplantation Monograph Benza R, Corris P, Park M, Uber P. UAB Printing; 2015. p. 32-43.
4. Mullin C, **Mathai SC**. Pulmonary Hypertension Failing a Single Agent. In: Scleroderma: From Pathogenesis to Comprehensive Management, 2<sup>nd</sup> Edition. Varga J, Denton CP, Silver RM, Wigley FM; 2017.
5. **Mathai SC**, Galie N. The Management of Pulmonary Arterial Hypertension in the Setting of Systemic Sclerosis. In: Scleroderma: From Pathogenesis to Comprehensive Management, 2<sup>nd</sup> Edition. Varga J, Denton CP, Silver RM, Wigley FM; 2017.

##### Editorials [ED]

1. **Mathai SC**. The Wisdom of the PHAROS. *J Rheumatol* 2011;38:2089-91. PMID: 21965691
2. **Mathai SC**. Solvitur ambulando...or maybe not? *Chest* 2013;143:285-7. PMID: 23381304
3. Chin K, **Mathai SC**. Exercise echocardiography in connective tissue disease. *J Am Coll Cardiol* 2015;66:385-7. PMID: 26205596
4. Eberlein M, **Mathai SC**. Lung transplantation in scleroderma: Time for the pendulum to swing? *Ann Am Thorac Soc* 2016;13:767-9. PMID: 27295149
5. **Mathai SC**, McLaughlin VV. Beast of (PAH) burden. *JAMA Cardiology* 2016;1(9):1030-31. PMID:27851836
6. **Mathai SC**, Kawut SM. Magnetic resonance imaging in pulmonary arterial hypertension: Panacea or pixilation? *Am J Respir Crit Care Med* 2017;196:129-131. PMID: 28797971
7. **Mathai SC**. Precision medicine in pulmonary hypertension: Start with the end (point). *Int J Cardiol* 2018; PMID:29552434
8. **Mathai SC**, Ryan JJ. The growing burden of pulmonary hypertension in the modern era: A zebra no more? *Circ Cardiovasc Qual Outcomes* 2018;11:e004536. PMID:29444928
9. McCormack MC, **Mathai SC**. A Crossroads between the heart and the lungs: Air pollution and pulmonary hypertension. *Eur Respir J* 2019; PMID: 31147423

##### Letters, Correspondence [LT]

1. **Mathai SC**, Polito AJ. The questionable efficacy of pirfenidone in IPF. *Am J Respir Crit Care Med* 2005;172:1228. PMID: 16249323
2. **Mathai SC**, Hassoun PM. N-terminal brain natriuretic peptide in scleroderma-associated pulmonary arterial hypertension. *Eur Heart J* 2007;28:140-1. PMID: 17164254

3. Girgis RE, **Mathai SC**, Wigley FM, Hassoun PM. Survival in systemic sclerosis-related pulmonary arterial hypertension in the modern treatment era. *Am J Respir Crit Care Med* 2009;180:1280. PMID: 19949241
4. **Campo A**, **Mathai SC**, Girgis RE, Hassoun PM. Is pulmonary arterial hypertension really a late complication of systemic sclerosis? *Chest* 2010; 138:461-2. PMID: 20682545
5. **Mathai SC**, Hassoun PM. Drs. Mathai and Hassoun reply. *J Rheumatol* 2013;40:91. PMID: 23401876
6. **Mathai SC**, Wise RA, Puhan MA, Lam D. Reply from the authors. *Am J Respir Crit Care Med* 2013;187:659. PMID: 23614142
7. Bourji KI, **Khair RM**, Damico RL, Kolb TM, **Mathai SC**, Hassoun PM. Vascular receptor autoantibodies in pulmonary arterial hypertension. *Am J Respir Crit Care Med* 2015;191:602. PMID: 25723828

#### Media Releases or Interviews [MR]

1. Understanding Pulmonary Hypertension. The Kojo Nnamdi Show. National Public Radio. <https://thekojoonamdishow.org/shows/2011-02-02/understanding-pulmonary-hypertension>. 2/2/11
2. 6 Minute Walk Test in Pulmonary Hypertension: Dr. Nitin Seam discusses the minimal important difference with Dr. Stephen Mathai and Dr. Lewis Rubin. Podcast. <https://itunes.apple.com/us/podcast/article-discussions-american/id396169227?mt=2>
3. History of Pulmonary Hypertension: Mechanisms and Physiology Webinar: Chairperson/Moderator <http://www.phassociation.org/Classroom/Recording/AboutPH/HistoryOfPHMechanismsAndPhysiology> 12/6/13.
4. History of Pulmonary Hypertension: Progress in Clinical Management Webinar: Chairperson/Moderator <http://www.phassociation.org/Classroom/Recording/AboutPH/HistoryOfPHProgressInClinicalManagement> 3/25/14.
5. Quality of Life in CTEPH Patients. *European Respiratory Journal*. Podcast. 8/11/2016 <https://soundcloud.com/erjpodcast>

#### Other Media [Videos, Websites, Blogs, Social Media]

1. McCormack MC, **Mathai SC**, Caruso J, Claves J, Mangione S, and Kane GC. Resident as Teacher: Developing Skills for Bedside Teaching on Ward Rounds. Video Production. Thomas Jefferson University Hospital Department of Medicine. May 2001.
2. **Mathai SC**. What is Cystic Fibrosis? Johns Hopkins University Cystic Fibrosis Program. Website. June 2005.
3. **Mathai SC**, Tudor RM, Hassoun PM. An 18-year old woman with severe dyspnea, hypoxia, and abnormal chest findings. *American Thoracic Society Clinical Cases*. <http://www.thoracic.org/sections/clinical-information/ats-clinical-cases>. June 2009.
4. Keeping the PH Blues Away Webinar. Presenter. <http://www.phassociation.org/Classroom/Recording/LivingWithPH/KeepingThePHBluesAway?> 11/11/10

#### FUNDING

##### Extramural Funding

- |                   |   |
|-------------------|---|
| 9/1/14-8/30/19    | <p>Hopkins Clinical Center for Pulmonary Vascular Disease Phenomics Program<br/>U01HL125175<br/>NIH/NHLBI<br/>Principal Investigator: Hassoun/Mathai<br/>Role: Co-Principal Investigator, 20% effort<br/>The major goals of this project are to phenotype patients with various forms of pulmonary hypertension using a broad range of modalities including advanced imaging, invasive hemodynamics, genetics, genomics, and molecular techniques with the overarching goal of identifying common features between disease types thereby allowing for integrated, targeted therapeutic interventions.</p> |
| 01/01/17-12/31/22 | <p>Anastrozole in Pulmonary Arterial Hypertension (AIPH 2)<br/>R01HL134905<br/>NIH/NHLBI<br/>Mathai (Co-Investigator)</p>   |



The goals of this study are to assess the impact of anastrozole on functional capacity in patients with pulmonary arterial hypertension. This is a multi-center, randomized, double-blind, placebo-controlled, Phase II clinical trial of anastrozole with change in six minute walk distance at 6 months as the primary outcome.

04/30/19-04/29/2024 Mechanisms of Right Ventricular Dysfunction in Scleroderma-PAH  
2R01HL114910-06  
NIH/NHLBI  
Mathai (Co-Investigator)  
The goals of this study are to assess the mechanisms of right ventricular dysfunction in scleroderma-associated PAH using extensive clinical, physiologic, and molecular phenotyping of patients who receive pulmonary vasodilator therapy for PAH.

#### Research Extramural Funding-Pending

Palliative Care: Integration and Impact in Management of Elderly Patients with Pulmonary Hypertension  
NIH/NHLBI R01 Mechanism  
Role: Principal Investigator  
The major goals of this project are to identify acceptance of and barriers to integration of palliative care into management of elderly patients with pulmonary hypertension and assess the impact of this intervention upon patient related outcomes to develop a protocol for a subsequent multicenter randomized clinical trial.

Sildenafil for Early Pulmonary Vascular Disease in Scleroderma: the SEPVADIS Study  
Department of Defense  
Role: Principal Investigator  
The major goals of this project are to determine the effect of sildenafil compared to placebo on six minute walk distance, right ventricular function, hemodynamics, and quality of life in scleroderma patients with early pulmonary vascular disease.

#### Research Extramural Funding-Previous

1/1/05-1/1/06 The Minimal Clinically Important Difference in the Six Minute Walk Test for Patients with Idiopathic Pulmonary Fibrosis  
CHEST Foundation Clinical Research Award  
Total direct cost: \$5000  
Role: Principal Investigator  
The goal of this study was to determine the minimal clinically important difference in the six minute walk test for patients with IPF.

7/1/06-6/30/07 Prognostic Factors, Genetics, and Therapy in PAH-SSD  
F32HL083714  
Total direct cost: \$65,000  
Role: Principal Investigator, 100% effort  
The goal of this study was to identify prognostic factors in scleroderma-related pulmonary arterial hypertension and to identify the effects of novel therapies for this disease.

1/1/09-1/1/10 NIH Rheumatic Disease Research Core Center Pilot Grant  
NIH/NHLBI  
Neurohormonal Activation in PAH-SSc  
Total direct cost: \$15,000  
Role: Principal Investigator

The goal of this study was to characterize the expression of genes from peripheral blood mononuclear cells related to neurohormonal activation in patients with scleroderma-related pulmonary arterial hypertension.

- 1/1/08-1/1/12 Neurohormonal Activation in PAH-SSc  
Gilead Research Scholars Program in Pulmonary Arterial Hypertension  
Total direct cost: \$130,000  
Role: Principal Investigator  
The goal of this study is to determine the effect of PAH-specific therapy on expression of genes related to neurohormonal activation in scleroderma-related pulmonary arterial hypertension.
- 7/1/09-6/30/15 The Neurohormonal Axis in Scleroderma-Related Pulmonary Arterial Hypertension  
K23HL092287  
NIH  
Total direct cost \$875,000  
Role: Principal Investigator, 75% effort  
The major goals of this project are to describe the differences in neurohormonal response to pulmonary hypertension between patients with idiopathic and scleroderma-related pulmonary arterial hypertension using multiple modalities including serum markers and genetics and to determine whether these differences explain the worse survival in scleroderma-related pulmonary arterial hypertension.
- 7/1/09-6/30/15 The Neurohormonal Axis in Scleroderma-Related Pulmonary Arterial Hypertension  
K23HL092287  
Pulmonary Hypertension Association (supplemental award for K23 administered by NHLBI)  
Total direct cost \$312,500  
Role: Principal Investigator, 75% effort  
The major goals of this project are to describe the differences in neurohormonal response to pulmonary hypertension between patients with idiopathic and scleroderma-related pulmonary arterial hypertension and to determine whether these differences explain the worse survival in scleroderma-related pulmonary arterial hypertension.
- 7/1/14-6/30/17 Mechanisms of Right Ventricular Dysfunction in PAH  
R01HL114910  
NIH/NHLBI  
Principal Investigator: Hassoun/Kass  
Role: Co-Investigator, 10% effort  
The goals of this project are to 1) derive optimal non-invasive measures of right ventricular (RV) performance based on cardiac magnetic resonance imaging to predict survival in both idiopathic (IPAH) and scleroderma-associated (SSc-PAH) pulmonary arterial hypertension (PAH); 2) determine RV function and PA interaction by invasive pressure-volume and right heart catheterization, using rate pacing and leg-exercise to assess reserve RV function; and 3) obtain RV biopsies to test the role of primary sarcomere dysfunction to reduced RV contractility in PAH, identify cytokine activation pathways linked to transforming growth factor-beta cascades and angiogenesis modulators, and assess the potential for associated serum biomarkers to reflect RV disease.
- 1/1/15-12/31/18 Validation of the Tricuspid Annular Plane Systolic Excursion in Scleroderma Associated Pulmonary Arterial Hypertension  
Scleroderma Foundation  
Role: Principal Investigator, 10% effort  
The major goals of this project are to validate TAPSE as an outcome measure in scleroderma associated PAH and to define the minimal important difference of this measure in this population.

Educational Extramural Funding- none

Clinical Extramural Funding-none

System Innovation or Quality Improvement Extramural Funding-none

Other Extramural Funding-

1/19-present            The Ann Dana Kusch Multidisciplinary Program for Interstitial Lung Disease and Pulmonary Hypertension Research  
Total Direct Cost: \$1,000,000  
Role: Co-PI (Mathai/Danoff)  
The major goal of this program is to develop new clinical strategies for the evaluation and treatment of patients with pulmonary hypertension in the setting of interstitial lung disease.

INTRAMURAL Funding

Research Intramural Funding-none

Educational Intramural Funding-none

Clinical Intramural Funding-none

System Innovation or Quality Improvement Intramural Funding-none

Other Intramural Funding-none

#### CLINICAL ACTIVITIES

Clinical Focus

1. Evaluation and management of pulmonary hypertension
2. Evaluation and management of pulmonary hypertension related to scleroderma
3. Evaluation and management of pulmonary hypertension related to interstitial lung disease

Certification

Medical, other state/government licensure

1999 – 2004    Pennsylvania

2004 – present    Maryland, #D0060811

Boards, other specialty certification

1999-            Basic Life Support

1999-            Advanced Cardiac Life Support

2002-2012      American Board of Internal Medicine Diplomate

2009-            American Board of Internal Medicine, Pulmonary Medicine

2010-            American Board of Internal Medicine, Critical Care Medicine

Clinical (Service) Responsibilities

2008-present    Pulmonary/Critical Care Medicine, Attending Physician, Johns Hopkins University School of Medicine, 8-12 weeks/year

2008-present    Pulmonary Hypertension Clinic, Attending Physician, Johns Hopkins Outpatient Center, one-half day/week

Membership in or examiner for specialty board-none

Clinical Program Building/Leadership-none

Clinical Demonstration Activities-none

Development of nationally/internationally recognized clinical standard of care-none

## EDUCATIONAL ACTIVITIES

### Educational Focus

1. Evaluation and management of pulmonary vascular disease
2. Evaluation and management of connective tissue disease related lung disease
2. Evaluation and management of lung transplantation patients

### Classroom Instruction

#### *JHMI/Regional*

- 2001-2003 Alpha Omega Alpha Student Lecture Series Speaker, Jefferson Medical College
- 2002-2003 Facilitator, Daily Internal Medicine Morning Report, Jefferson Medical College
- 2002-2003 Instructor of Physical Diagnosis, Jefferson Medical College
- 2005-2006 Instructor, Management of Sepsis Module; Physiology Course, Johns Hopkins University School of Medicine
- 2006-2007 Instructor, Patient, Physician, and Society, Johns Hopkins University School of Medicine
- 2008-present Lecturer, Pulmonary Fellow Summer Lecture Series, given once yearly to incoming pulmonary fellows  
“Evaluation and Management of Pulmonary Hypertension”
- 2012-present Lecturer, Cardiology Fellow Summer Lecture Series, given once yearly to incoming cardiology fellows  
“Pulmonary Hypertension: The 30,000 Foot View (and a bit closer)”
- 2012-present Lecturer, Carol Johns Service, Internal Medicine Housestaff, lecture 6-8 times each academic year  
“Management of Decompensated Pulmonary Hypertension”
- 2009-present Lecturer, Johns Hopkins Internal Medicine Housestaff, given once yearly  
“Management of Pulmonary Hypertension”

#### *National*

- 2000-2003 National Youth Leadership Forum Speaker, Jefferson Medical College

#### *International*

None

### Clinical Instruction

#### *JHMI/Regional*

- 2002-2003 Instructor, Code Blue Patient Simulator, Jefferson Medical College
- 2011-present Barker Firm Faculty, The Johns Hopkins Osler Residency Program  
Medical Student Teaching Attending November-December 2011  
Housestaff Teaching Attending January-February 2013; February-March 2015, March 2016
- 2008-present Carol Johns Service, Attending, inpatient service, 6-8 weeks per year
- 2008-present Pulmonary Hypertension Clinic, Attending, Housestaff and Fellows, one ½ day weekly

### CME Instruction

#### *JHMI/Regional*

- 4/1/07 Lecturer, *Non-Invasive Assessment of Pulmonary Arterial Hypertension*, Evolving Concepts in Pulmonary Hypertension Conference. Baltimore, Maryland
- 11/12/10 Lecturer, *Diagnosis and Assessment of PH*, Pulmonary Hypertension Association Preceptorship Program  
University of Maryland, Baltimore, Maryland
- 3/5/14 Lecturer, *Treatment of Pulmonary Arterial Hypertension*, Pulmonary Hypertension Association Preceptorship  
Program: A Collaborative Approach for Clinicians on the Front Line, Inova Fairfax Hospital, Falls  
Church, VA
- 12/8/15 Lecturer, *Treatment of Pulmonary Arterial Hypertension*, Pulmonary Hypertension Association Preceptorship  
Program: A Collaborative Approach for Clinicians on the Front Line, Baltimore, MD

#### *National*

- 11/16/13 Moderator/Lecturer, *Selection of Appropriate Therapy*, Pulmonary Hypertension Association Preceptorship  
Program, Phoenix, Arizona
- 11/16/13 Moderator/Lecturer, *Pulmonary Hypertension in Chronic Lung Disease (WHO Group 3 PH)*, PHA  
Preceptorship Program, Phoenix, Arizona

- 6/29/14 Lecturer, *Update on HAP and CAP*, 12<sup>th</sup> Update in Pulmonary, Critical Care, and Sleep Medicine Course, The Greenbrier, White Sulpher Springs, WV
- 6/29/14 Lecturer, *Update in Pulmonary Hypertension*, 12<sup>th</sup> Update in Pulmonary, Critical Care, and Sleep Medicine Course, The Greenbrier, White Sulpher Springs, WV
- 6/26/15 Lecturer, *Pulmonary Hypertension in 2015: Beyond the Kingdom of the Near-Dead*, 13<sup>th</sup> Update in Pulmonary, Critical Care, and Sleep Medicine Course, Wild Dunes Resort, Isle of Palms, SC
- 6/26/15 Lecturer, *The Other Pulmonary Hypertension(s)*, 13<sup>th</sup> Update in Pulmonary, Critical Care, and Sleep Medicine Course, Wild Dunes Resort, Isle of Palms, SC
- 10/16/15 Moderator/Lecturer, *Treatment of Pulmonary Arterial Hypertension*, Pulmonary Hypertension Association Preceptorship Program: A Collaborative Approach for Clinicians on the Front Line, Metro Park, NJ

Workshops/seminars

*JHMI/Regional* none

*National*

- 6/6-7/16 Moderator, "How do big data analytics and deep clinical phenotyping help PVD management?" NHLBI Workshop: Enhancing Treatments for Pulmonary Vascular Diseases (PVD) Through Precision Medicine: A Joint NHLBI-CMREF Workshop, Chicago, IL

*International* none

Mentoring

Pre-doctoral Advisees/Mentees

- 6-8/09 Kaitlin Kroenig, Minority Summer Student Program, Current Position: Sales Representative Pharmaceutical Industry
- 6-8/10 Calvin Lewis, Minority Summer Student Program, Current Position: MD/PhD student, University of Missouri-Columbia School of Medicine
- 6-8/11 Andrea Yonge, Minority Summer Student Program, Current Position: Medical Student, Johns Hopkins University School of Medicine
- 6-8/12 Kimberly Shao, Minority Summer Student Program, Current Position: Medical Student, University of Pennsylvania Perleman School of Medicine
- 6-8/13 Chisom Nwaneri, Minority Summer Student Program, Current Position: MPH student, Duke University Global Health Institute; shared publication (ref. 43)
- 6-8/16 Destiny Miller, Minority Summer Student Program, Current Position: rising 1<sup>st</sup> Year Student, Howard University School of Medicine

Post-doctoral Advisees/Mentees

- 7/08-7/10 Jerome LePavec, MD PhD, Visiting Post-Doctoral Fellow, Division of Pulmonary and Critical Care Medicine, Current position: Faculty, Center National de Reference de l'Hypertension Pulmonaire Severe. Paris, France; shared publications (refs 10, 11, 12, 14)
- 7/08-7/10 Arantza Campo, MD, Visiting Post-Doctoral Fellow, Division of Pulmonary and Critical Care Medicine, Current position: Professor of Medicine, Department of Pulmonology, University of Navarra. Navarra, Spain; shared publications (refs 10, 11, 14)
- 7/09-7/10 Monica Bueso, MD, Post-Doctoral Fellow, Division of Pulmonary and Critical Care Medicine, Current Position: Research Assistant, Hospital Clinic, Barcelona, Spain; shared publication (ref 10)
- 7/11-7/13 Neal Chaisson, MD, Post-Doctoral Fellow, Division of Pulmonary and Critical Care Medicine, Current position: Associate Staff, Cleveland Clinic; shared publications (refs 29,34)
- 7/12-7/13 Tomeka Suber, MD PhD, Osler Residency Housestaff, Recipient: 2013 Resident Development Scholarship, American Thoracic Society, Current position: Faculty, Division of Pulmonary and Critical Care Medicine, University of Pittsburgh; shared publications (ref 39)
- 7/12-7/16 Benjamin Kelemen, MD, Doris Duke Scholar, Current Position: Housestaff, Osler Residency Program, Johns Hopkins Hospital; shared publications (ref 34)
- 7/13-6/14 Majid Shafiq, MD, Attending hospitalist, Current Position: Post-Doctoral Fellow, Division of Pulmonary and Critical Care Medicine, Johns Hopkins University School of Medicine

- 7/13-7/18 Rubina Khair, MD MPH, Post-Doctoral Fellow, Division of Pulmonary and Critical Care Medicine, Recipient: 2014 Minority Trainee Development Scholarship, American Thoracic Society, Current position: Instructor, Division of Pulmonary and Critical Care Medicine; Recipient: Investigator Research Supplement to Promote Diversity in Health Related Research Award, NIH/NHLBI; shared publications (refs 37,39,43,53)
- 7/14-present Christopher Mullin, MD, Post-Doctoral Fellow, Division of Pulmonary and Critical Care Medicine, Current Position: Assistant Professor, Division of Pulmonary and Critical Care Medicine; Alpert Medical School of Brown University; Recipient: 2015 Individual Kirschstein National Service Research Award (refs 46,48,55,56)
- 7/14-6/16 Diana Amarei, MD, Osler Residency Housestaff, Current Position: Fellow, Division of Pulmonary and Critical Care Medicine, University of Maryland Medical Center
- 7/14-7/15 Arun Jose, MD, Osler Residency Housestaff, Current Position: Assistant Professor, Division of Pulmonary and Critical Care Medicine, University of Cincinnati School of Medicine
- 7/15-7/16 Kristina Montemayor, MD, Osler Residency Housestaff, Current Position: Fellow, Division of Pulmonary and Critical Care Medicine, Johns Hopkins Hospital
- 7/15-7/17 Matthew Schimmel, MD Osler Residency Housestaff, Current Position: Fellow, Division of Pulmonary and Critical Care Medicine, Emory University Medical Center
- 7/15-present David Furfaro, MD, Osler Residency Housestaff, Current Position: Fellow, Division of Pulmonary and Critical Care Medicine, Columbia University Medical Center
- 7/16-present Monica Mukherjee, MD MPH, Assistant Professor of Medicine, Division of Cardiology, Johns Hopkins University
- 8/17-present Catherine Simpson, MD, Post-Doctoral Fellow, Division of Pulmonary and Critical Care Medicine; Johns Hopkins University
- 8/17-present Aparna Balasubramanian, MD, Post-Doctoral Fellow, Division of Pulmonary and Critical Care Medicine; Johns Hopkins University

#### Thesis Committees –

- 2017-present Tammy Wichman, MD, Candidate for Masters in Clinical Research, University of Nebraska Medical Center
- 2018-2019 Reiko Asano, BSN, RN, Candidate for Doctor of Philosophy, Johns Hopkins University School of Nursing

#### Training Program Participation –

- 2012- Intern Selection Committee, Osler Residency Program, Johns Hopkins Hospital
- 2013-2017 Faculty Co-Leader, Carol Johns Service, Osler Residency Program, Johns Hopkins Hospital
- 2017-present Faculty Leader, Carol Johns Service, Osler Residency Program, Johns Hopkins Hospital

#### Educational Program Building/Leadership

- 1/11-present Organizer, Physiology Interest Group, Johns Hopkins University School of Medicine
- 7/17-present Faculty Leader, Carol Johns Service, Osler Residency Program, Johns Hopkins Hospital. In this capacity, I am responsible for the clinical operations and educational experience of the housestaff and fellows rotating on the Carol Johns Service. We have created and annually update a repository of talks and manuscripts that span the breadth of pulmonary medicine. I coordinate daily lectures given by the pulmonary faculty on pertinent topics for inpatient pulmonary care. I also coordinate enrichment experiences for the housestaff in subspecialty clinics (cystic fibrosis, interstitial lung disease, lung transplantation, pulmonary physiology) and the bronchoscopy suite. Since taking over this responsibility in 2013, resident satisfaction with the rotation experience has improved by more than 15%.
- 7/11-present National Chairperson, Preceptorship Program for the Pulmonary Hypertension Association. In this capacity, I am responsible to organizing 10-15 day-long educational programs focused on pulmonary hypertension for community physicians across the United States. I develop content directly and review solicited content from other experts in pulmonary vascular disease and identify and arrange for experts in pulmonary vascular disease to present these topics at the symposia. Last year, we conducted 12 events in 12 metropolitan areas that included over 600 participants.

Educational Extramural Funding – None

## RESEARCH ACTIVITIES

### Research Focus

My contributions to the understanding of pulmonary vascular disease has encompassed three major areas: scleroderma-related pulmonary hypertension, right ventricular function in pulmonary arterial hypertension (PAH), and outcomes assessment in PAH.

### Research Program Building/Leadership

7/15-present Scleroderma Center-Pulmonary Hypertension Program Clinical Research Group  
I organized this group to facilitate exchange of ideas and development of joint research projects.  
Through this formal meeting structure, we have developed two research projects and are in the process of initiating a tissue biorepository.

### Research Demonstration Activities-none

Inventions, Patents, Copyrights-none

Technology Transfer Activities-none

## SYSTEM INNOVATION AND QUALITY IMPROVEMENT ACTIVITIES-none

## ORGANIZATIONAL ACTIVITIES

### Institutional Administrative Appointments

1990-1994 President of the Class of 1994, Rutgers College  
1995-1999 Jefferson Medical College Student Council Representative  
1997-1998 Jefferson Medical College Admissions Committee Speaker  
1999-2000 Thomas Jefferson University Hospital Housestaff Council Member  
2000-2001 Treasurer, Thomas Jefferson University Hospital Housestaff Association  
2000-2001 Search Committee Member, Dean of Jefferson Medical College  
2001-2002 President, Thomas Jefferson University Hospital Housestaff Association  
2002-2003 Thomas Jefferson University Medical Grand Rounds Coordinator  
2002-2003 Department of Medicine Steering Committee Member, Thomas Jefferson University Hospital  
2002-2003 Attending-Resident Workflow Taskforce Chairperson, Thomas Jefferson University Hospital  
2002-2003 Pharmacy and Therapeutics Committee, Thomas Jefferson University Hospital  
2002-2003 Clinical Informatics Committee, Thomas Jefferson University Hospital  
2002-2003 Acute Coronary Syndrome Clinical Pathway Committee, Thomas Jefferson University Hospital  
2002-2003 Department of Medicine Liaison to Emergency Department, Thomas Jefferson University Hospital  
2013-2017 Co-Faculty Leader, Carol Johns Service, Osler Medical Residency, Johns Hopkins Hospital  
2017- Faculty Leader, Carol Johns Service, Osler Medical Residency, Johns Hopkins Hospital

### Editorial Activities

#### Editorial Board Appointments

2011-2012 Editorial Advisor, *Pulmonary Hypertension Reviews*  
2012-2014 Senior Editor, *Pulmonary Hypertension Reviews*  
2013- *European Respiratory Journal*  
2014- *Annals of the American Thoracic Society*  
2015- Medical Editor, *Lung Disorders White Papers: Scientific American-Consumer Health*  
2017-2018 Guest Editor, *Advances in Pulmonary Hypertension; Spring 2018*

### Journal peer review activities

2006-present *Chest*  
2007-present *Cardiology*  
2007-present *Clinical Rheumatology*  
2008-present *European Respiratory Journal*  
2008-present *International Journal of Clinical Practice*

2008-present *American Journal of Respiratory and Critical Care Medicine*  
2009-present *Journal of Rheumatology*  
2010-present *Journal of the American College of Cardiology*  
2010-present *Arthritis and Rheumatism*  
2010-present *Seminars in Arthritis and Rheumatism*  
2011-present *International Journal of Heart-Lung Transplant*  
2012-present *Thorax*  
2013-present *Plos-One*  
2014-present *Annals of the American Thoracic Society*  
2014-present *Circulation*  
2014-present *Pulmonary Circulation*  
2015-present *The Medical Letter*  
2015-present *Health and Quality of Life Outcomes*  
2016-present *Journal of Applied Physiology*  
2016-present *American Journal of Physiology-Lung Cellular and Molecular Physiology*  
2016-present *Journal of the American Medical Association-Cardiology*  
2019-present *Annals of Internal Medicine*

### **Advisory Committees, Review Groups/Study Sections**

#### Advisory Committees

2012 Scleroderma Foundation/Pulmonary Hypertension Association, Committee for Screening Recommendations for Pulmonary Hypertension in Connective Tissue Diseases  
2015- Member, American Thoracic Society Working Group for the Assessment of Knowledge Gaps in Right Ventricular Research  
2015- Member, American Thoracic Society Working Group for the Assessment of Health Disparities in Pulmonary Hypertension  
2017- Member, Rare Disease Advisory Panel, Patient Centered Outcomes Research Institute  
2017-2018 6<sup>th</sup> World Symposium on Pulmonary Hypertension: Task Force on Trial Design and New Therapies for Pulmonary Arterial Hypertension. Nice, France

#### Review Groups/Study Sections

2012- Reviewer, Chest Foundation Pulmonary Hypertension Award  
1/5/16 Reviewer, NHLBI-CSB-HV-2017-01-JS:Vascular Interventions/Innovations and Therapeutic Advances (VITA) Stage-A & Stage-B Round 2  
4/14/16 Reviewer, American Heart Association, Lung and Resuscitation Clinical Section  
2/13/17 Reviewer, Department of Defense Peer Reviewed Medical Research Program, Lung Disease Section  
2/9/18 Reviewer, Infectious Diseases, Reproductive Health, Asthma and Pulmonary Conditions Study Section, NHLBI  
11/21/19 Reviewer, Rare Disease Cohorts in Heart, Lung, Blood, and Sleep Disorders, Study Section, NHLBI

### **Professional Societies**

2002-present American Thoracic Society (ATS); Member  
2005-present Pulmonary Circulation Committee, Member  
Program Committee, 2012-present  
Nominating Committee, 2015-present  
Clinical Problems Committee, Member  
Website Committee, 2009-2011  
2002-present American College of Chest Physicians (ACCP); Member  
2005-present Pulmonary Vascular Disease NetWork, Member  
Steering Committee, 2011-present  
Vice-Chair, 2015-2017  
Chair, 2017-2019  
2005-present European Respiratory Society (ERS); Member  
2003-2008 Society of Critical Care Medicine (SCCM); Member  
2007-2014 International Society of Heart-Lung Transplantation (ISHLT); Member



2009-present Pulmonary Vascular Research Institute (PVRI); Member  
 2007-present Pulmonary Hypertension Association (PHA); Member  
 2010-present Biennial Program Planning Committee; Member  
 2011-2019 Preceptorship Program; National Chairperson  
 2012-2014 Centers of Excellence Criteria Committee; Member  
 2013-2019 Scientific Leadership Council; Member  
 2016-present Publication and Presentations Committee, Pulmonary Hypertension Association Registry

Conference Organizer

*JHMI/Regional*

6/06, 6/07 Conference Organizer, *Life with Pulmonary Fibrosis*, Patient Education Day, Johns Hopkins Bayview Medical Center (3 sessions)  
 11/12/10 Conference Organizer, *Diagnosis and Assessment of PH*, Pulmonary Hypertension Association Preceptorship Program, University of Maryland, Baltimore, Maryland  
 3/5/14 Conference Organizer/Co-Chair, Pulmonary Hypertension Association Preceptorship Program: *A Collaborative Approach for Clinicians on the Front Line*, Inova Fairfax Hospital, Falls Church, VA  
 10/16/15 Conference Organizer/Co-Chair, Pulmonary Hypertension Association Preceptorship Program: *A Collaborative Approach for Clinicians on the Front Line*, Metro Park, NJ  
 12/8/15 Conference Organizer/Chair, Pulmonary Hypertension Association Preceptorship Program: *A Collaborative Approach for Clinicians on the Front Line*, Baltimore, MD  
 10/13/17 Conference Organizer/Chair, Pulmonary Hypertension Association Preceptorship Program: *A Collaborative Approach for Clinicians on the Front Line*, Baltimore, MD

*National* None

*International*

2012-2018 Member, Program Committee, American Thoracic Society Annual Meeting

Session Chair

*JHMI/Regional* None

*National* None

*International*

5/17/09 Session Chair, "Right Ventricular Function and Exercise" Poster Discussion session, American Thoracic Society International Meeting, San Diego, CA.  
 5/15/13 Session Chair, "The Right Ventricle in Health, Exercise, and Disease", Post-graduate course, American Thoracic Society International Meeting, Philadelphia, PA.  
 5/17/13 Session Chair, "Clinical Outcomes in Pulmonary Hypertension" Poster Discussion session. American Thoracic Society International Meeting, Philadelphia, PA  
 10/26/13 Session Chair, "How Will I Know What to Follow and When to Change Therapy?", Panel Discussion session. American College of Chest Physicians Meeting, Chicago, IL  
 10/27/13 Session Chair, "Practical Aspects of Diagnosing and Managing Pulmonary Hypertension" Plenary Presentation. American College of Chest Physicians Meeting, Chicago, IL  
 5/14/14 Session Chair, "The Right Ventricle in Health, Exercise, and Disease", Post-graduate course, American Thoracic Society International Meeting, San Diego, CA.  
 5/16/14 Session Chair, "Diagnostic and Prognostic Assessment of Pulmonary Vascular Disease", Poster Discussion session, American Thoracic Society International Meeting, San Diego, CA.  
 10/25/15 Session Chair, "The Right Place: Management of Right Ventricular Failure in the ICU", American College of Chest Physicians Annual Meeting, Montreal, CA  
 6/7/16 Session Chair, "Big data analytics and deep clinical phenotyping", NHLBI Workshop: Enhancing Treatments for Pulmonary Vascular Disease (PVD) Through Precision Medicine, Chicago, IL

Consultantships

2009-current Bayer Corporation, Health Outcomes Research.

2011-2013	United Therapeutics, CHARTER group, Advisory Committee
2013-current	Actelion Pharmaceuticals, Ltd, Steering Committee, TRITON study
2013-current	Bayer Corporation. Steering Committee, MOTION study.
2015-2016	Gilead Sciences, Health Economics Research
2018-	United Therapeutics, Health Economics Research

## RECOGNITION

### Awards and Honors

1994	Commencement Speaker, Rutgers College
1997-1999	Hobart Amory Hare Honor Medical Society
1997-1998	Foerderer Scholarship for International Study
2000	Thomas Jefferson University Intern of the Year Award
2001-	<i>Alpha Omega Alpha</i> Honor Medical Society
2001	Thomas Jefferson University Resident Teaching Award
2005-2007	Chest Foundation Clinical Research Trainee Award
2005	NIH Loan Repayment Award for Clinical Research
2007	First Prize Research Poster, Maryland Thoracic Society
2008	National Institutes of Health Loan Repayment Program-Renewal
2009	American College of Chest Physicians Leadership Development Program
2010	National Institutes of Health Loan Repayment Program- 2 <sup>nd</sup> Renewal
2012	National Institutes of Health Loan Repayment Program-3 <sup>rd</sup> Renewal
2012	Pulmonary Hypertension Association-Research Abstract Winner
2012	Elected Faculty of the American College of Chest Physicians
2016	The Frederick L. Brancati Excellence in Mentoring Award

### Invited Talks

#### *JHMI/Regional*

6/12/03	Speaker, "Graduate Medical Education at Jefferson: Past, Present, and Future", Thomas Jefferson University Grand Rounds. Philadelphia, PA
3/5/07	Speaker, "Treatment of Pulmonary Hypertension", Maryland Society of Health System Pharmacists Annual Meeting. Columbia, Maryland
4/15/07	Speaker, "Pulmonary Hypertension and Interstitial Lung Disease", Life with Pulmonary Fibrosis Conference, Baltimore, Maryland
5/7/07	Speaker, "Um Cahn Buree", Pulmonary Grand Rounds, Johns Hopkins University School of Medicine
9/17/07	"Treatment of Pulmonary Hypertension", Maryland Society of Health System Pharmacists Annual Meeting. Columbia, Maryland
10/15/07	Speaker, "Pulmonary Hypertension and Interstitial Lung Disease", Life with Pulmonary Fibrosis Conference, Baltimore, Maryland
4/6/08	Speaker, "An Acute Case of Bad Handwriting", Pulmonary Grand Rounds, Johns Hopkins University School of Medicine
9/16/08	Speaker, "ICU Management of Pulmonary Hypertension", Respiratory Care Conference, Johns Hopkins Bayview Medical Center. Baltimore, Maryland
12/15/08	Speaker, "Treatment of Pulmonary Hypertension: For Whom? With What?" Johns Hopkins Hospital Pharmacy Department Grand Rounds. Baltimore, Maryland
2/18/10	Speaker, "Emergency Situations in Pulmonary Hypertension", Pulmonary Hypertension Association on the Road, Pulmonary Hypertension Association. Towson, Maryland
4/28/10	Speaker, "Tale of Two Failures", Pulmonary Grand Rounds, Johns Hopkins University School of Medicine
11/18/11	Speaker, "Different Strokes for Different Folks: The Right Ventricle in PAH", Medical Grand Rounds. Johns Hopkins University School of Medicine
12/4/11	Speaker, "If She Floats Like a Duck"...Pulmonary Grand Rounds, Johns Hopkins University School of Medicine
4/13/12	Speaker, "If She Floats Like a Duck...Part 2" Pulmonary Grand Rounds, Johns Hopkins University School of Medicine

- 7/15/12 Speaker, "Pulmonary Hypertension: The 30,000 Foot View", Pulmonary Fellows Lecture Series, Johns Hopkins School of Medicine
- 7/17/13 Speaker, "Pulmonary Hypertension: The 30,000 Foot View", Pulmonary Fellows Lecture Series, Johns Hopkins School of Medicine
- 4/5/2014 Speaker, "It's All in Your Head" Pulmonary Grand Rounds, Johns Hopkins University School of Medicine
- 7/22/14 Speaker, "Pulmonary Hypertension: The 30,000 Foot View", Pulmonary Fellows Lecture Series, Johns Hopkins School of Medicine
- 9/9/14 Speaker, "Pulmonary Hypertension in the Elderly: An Epidemic?" Medical Grand Rounds, Johns Hopkins Bayview Medical Center
- 12/4/15 Speaker, "A Unicorn Among Zebras", Pulmonary Grand Rounds, Johns Hopkins University School of Medicine
- 10/19/17 Speaker, "It's High Time...", Pulmonary Grand Rounds, Johns Hopkins University School of Medicine
- 3/14/18 Speaker, "Updates in Management of Pulmonary Hypertension: Unencumbered by Data" Cardiology Grand Rounds, Johns Hopkins University School of Medicine
- National*
- 4/17/08 Speaker, "Pulmonary Arterial Hypertension Associated with Scleroderma", Pulmonary Grand Rounds, Wake Forest University. Winston-Salem, NC
- 5/30/11 Speaker, "Pulmonary Vascular Disease: Bete Noire of Scleroderma", Pulmonary Grand Rounds, University of California at Los Angeles, Los Angeles, CA
- 1/18/12 Speaker, "A Tale of Two\* Failures", Pulmonary Grand Rounds, University of Pennsylvania, Pennsylvania, PA
- 2/16/13 Keynote Speaker, "A View from the Right: Insights into Pulmonary Arterial Hypertension from the Study of Scleroderma", *Centricity Series*, Hofstra-North Shore-Long Island Jewish Medical College. Manhasset, NY
- 4/19/13 Speaker, "Righting the Ship: Challenges in the Treatment of Pulmonary Arterial Hypertension", Pulmonary Grand Rounds, Hofstra-North Shore-Long Island Jewish Medical College. Manhasset, NY
- 5/5/13 Speaker, "The Right Stuff: Determinants of Right Ventricular Function in Pulmonary Arterial Hypertension Related to Scleroderma", Pulmonary Grand Rounds, University of Pittsburgh Medical Center, Pittsburgh, PA
- 6/18/13 Speaker, "Is Scleroderma-Related Pulmonary Arterial Hypertension a Distinct Phenotype?", *7<sup>th</sup> Annual Yale Pulmonary Hypertension Symposium*, Milton, CT
- 6/18/13 Speaker, "Pulmonary Vascular Disease: Bete Noire of Scleroderma", *7<sup>th</sup> Annual Yale Pulmonary Hypertension Symposium*, Milton, CT
- 9/8/13 Speaker, "On the Right Track: Insights into Pulmonary Hypertension from the Study of Scleroderma", Pulmonary Grand Rounds, Duke University Medical Center, Durham, NC
- 11/4/13 Speaker, "Advances in Pulmonary Hypertension Therapy", Pulmonary Grand Rounds, University of Illinois at Chicago, Chicago, IL
- 9/16/14 Speaker, "Diagnosis and Management of PH in Parenchymal Lung Diseases", *Innovations in Heart Failure and Pulmonary Hypertension Conference*, Allegheny General Hospital of Temple University School of Medicine, Pittsburgh, PA
- 9/16/14 Speaker, "PAH in Connective Tissue Disease Patients", *Innovations in Heart Failure and Pulmonary Hypertension Conference*, Allegheny General Hospital of Temple University School of Medicine, Pittsburgh, PA
- 10/13/15 Speaker, "A Step in the Right Direction: Understanding Right Ventricular Function from the Study of Scleroderma", Baylor College of Medicine, Houston, TX
- 4/9/16 Speaker, "Exercise Capacity Should be the Primary Endpoint in Randomized Clinical Trials of PAH", *The Alfred P. Fishman Symposium: Exercise in the Diagnosis, Assessment, and Treatment of Pulmonary Hypertension*. University of Pennsylvania Perelman School of Medicine, Philadelphia, PA
- 7/29/16 Speaker, "Validation of the Tricuspid Annular Plane Systolic Excursion in SSc-PAH", *Early Career Investigator Workshop*, Scleroderma Foundation, New Orleans, LA
- 9/28/16 Speaker, "Outcome Measures in PAH: The Emperor Has No Clothes", Brigham and Women's Hospital Pulmonary Vascular Disease Conference, Boston, MA
- 10/14/16 Speaker, "A Measured Response: Assessing the Impact of Therapy in PAH", Mount Sinai Respiratory Health Grand Rounds, New York, NY

- 4/21/17 Speaker, "Connecting the Dots: The Connection Between Connective Tissue Disease and Pulmonary Hypertension", Updates in Rheumatology: Pulmonary Involvement in Connective Tissue Disease Symposium, University of Nebraska Medical Center, Omaha, NE
- 9/18/17 Speaker, "Phenotype Based Therapies in PH: Looking Beyond WHO Class", Redefining Pulmonary Vascular Disease Using OMICs: The NIH/NHLBI PVDOMICs Study, Heart Failure Society of America, Dallas, TX
- 11/9/17 Speaker, "Pulmonary Hypertension in an Era of Precision Medicine: Using Scleroderma as a Paradigm", Pulmonary Grand Rounds, National Jewish Health, Denver, CO
- 4/15/18 Speaker, "Updates in the Screening for and Treatment of Pulmonary Hypertension in Connective Tissue Diseases", American College of Rheumatology State of the Art Conference, Chicago, IL
- 4/28/18 Key Note Speaker, "The Many Faces of Pulmonary Hypertension in Connective Tissue Disease", *2<sup>nd</sup> Annual Pulmonary Symposium*, Virginia Commonwealth University, Richmond, VA
- 4/28/18 Speaker, "Connecting the Dots: Pulmonary Hypertension in Connective Tissue Disease", *14<sup>th</sup> Annual Updates in Rheumatology Conference*, Johns Hopkins University School of Medicine, Baltimore, MD
- 5/4/18 Speaker, "Precision Medicine in Pulmonary Hypertension: Scleroderma as a Paradigm", Boston University Medical Center, Work in Progress Conference, Boston, MA
- 10/6/18 Speaker, "Pulmonary Hypertension Secondary to Lung Disease (Group III)". Comprehensive Review in Pulmonary Hypertension. CHEST Annual Meeting 2018, San Antonio, TX
- 10/9/18 Speaker, "Pulmonary Vascular Disease in Interstitial Lung Disease: Treat the PH: Pro", CHEST Annual Meeting 2018, San Antonio, TX
- 10/10/18 Speaker, "Why Should You Ask Your Pulmonary Patients About Their Sleep? Pulmonary Hypertension and Sleep". CHEST Annual Meeting, 2018, San Antonio, TX
- 12/10/18 Speaker, "From Diagnosis to Treatment to Outcomes: The Hopkins Experience in Scleroderma-Associated Pulmonary Arterial Hypertension". Pulmonary Hypertension Grand Rounds, Stanford University School of Medicine, Palo Alto, CA
- 10/18/19 Speaker, "Pulmonary Hypertension and Scleroderma". 10<sup>th</sup> Annual PH Symposium: Commonly Faced Conundrums in Pulmonary Hypertension. Advocate Heart Institute, Chicago, IL
- 10/22/19 Speaker, "HFpEF or PH of Both?" CHEST Annual Meeting 2019, New Orleans, LA
- 10/19/19 Speaker, "Pulmonary Hypertension: Comprehensive Review and Update", CHEST Annual Meeting 2019; Post-graduate course, New Orleans, LA
- 10/22/19 Speaker, "Connecting the Dots: Pulmonary Hypertension in Connective Tissue Disease", CHEST Annual Meeting 2019, New Orleans, LA
- International*
- 10/26/05 Speaker, "The Addition of Sildenafil to Bosentan in the Treatment of Pulmonary Arterial Hypertension", American College of Chest Physicians. Montreal, Canada
- 5/17/06 Speaker, "Health-Related Quality of Life in Pulmonary Hypertension", American Thoracic Society Meeting. San Diego, CA
- 10/28/06 Speaker, "Tricuspid Annular Plane Systolic Excursion Predicts Mortality in Pulmonary Arterial Hypertension Associated with Scleroderma", American College of Chest Physicians Meeting. Salt Lake City, UT
- 6/22/08 Speaker, "Understanding Pulmonary Hypertension: The Basics", 8<sup>th</sup> International Pulmonary Hypertension Conference Pulmonary Hypertension Association. Houston, TX
- 5/19/09 Speaker, "Pulmonary Hypertension and Interstitial Lung Disease", Sunrise Seminar Series, American Thoracic Society International Meeting. San Diego, CA
- 1/28/10 Speaker, "Adaptation versus Maladaptation of the RV in PAH", Pulmonary Vascular Research Institute. Lisbon, Portugal
- 1/28/10 Speaker, "Do Outcomes Differ Between Idiopathic and Scleroderma-related PAH?", Pulmonary Vascular Research Institute. Lisbon, Portugal
- 9/28/10 Speaker, "Disproportionate Elevation of NT-proBNP in Scleroderma-Related Pulmonary Arterial Hypertension", European Respiratory Society. Vienna, Austria
- 9/29/11 Speaker, "Different Strokes for Different Folks: The Right Ventricle in Pulmonary Arterial Hypertension", Pulmonary Grand Rounds, Center National de Reference de l'Hypertension Pulmonaire Severe, Hopital Antoine Beclere. Paris, France

- 10/27/11 Speaker, "Should I Treat This Patient's Pulmonary Hypertension related to Interstitial Lung Disease?", American College of Chest Physicians Meeting. Oahu, HI
- 4/27/12 Speaker, "The Pathophysiology of Right Ventricular Failure", International Society for Heart-Lung Transplantation. Prague, Czech Republic
- 5/15/12 Speaker, "Phenotyping the Right Ventricle in Pulmonary Hypertension", Wall Center Symposium, Stanford University, Palo Alto, CA
- 5/17/12 Speaker, "Treatment Targets in Pulmonary Arterial Hypertension", Update in Pulmonary Arterial Hypertension: What's New, What's Now, American Thoracic Society, Post Graduate Course, San Francisco, CA
- 6/20/12 Speaker, "The  $\beta$ -Adrenergic System and Scleroderma-Related Pulmonary Arterial Hypertension", 10<sup>th</sup> International Pulmonary Hypertension Association Scientific Sessions. Orlando, FL
- 6/21/12 Speaker, "Diet and Exercise in Pulmonary Hypertension", 10<sup>th</sup> International Pulmonary Hypertension Association Meeting. Orlando, FL
- 6/21/12 Speaker, "Treatment of Pulmonary Arterial Hypertension", 10<sup>th</sup> International Pulmonary Hypertension Association Meeting. Orlando, FL
- 6/22/12 Speaker, "Exercise-Induced Pulmonary Hypertension Should Be Treated: Con", American College of Chest Physicians Annual Meeting. Atlanta, GA
- 10/16/12 Speaker, "Pulmonary Hypertension in Interstitial Lung Disease Associated with Connective Tissue Disease", American College of Rheumatology Annual Meeting. Washington, DC
- 5/17/13 Speaker, "The Pathophysiology of Right Ventricular Failure", American Thoracic Society, Post-Graduate Course, Philadelphia, PA
- 10/26/13 Speaker, "Walking in Circles: The Trouble with the 6-Minute Walk Test in PAH", American College of Chest Physicians Annual Meeting, Chicago, IL
- 10/27/13 Speaker, "Pulmonary Approach to the Patient with Pulmonary Hypertension", American College of Chest Physicians Annual Meeting, Chicago, IL
- 10/27/13 Speaker, "What's New in Pulmonary Hypertension?", American College of Chest Physicians Annual Meeting, Chicago, IL
- 11/18/13 Speaker, "Pulmonary Hypertension in Connective Tissue Diseases", Pulmonary Hypertension Professionals Network, Pulmonary Hypertension Association, Washington, DC
- 5/16/14 Speaker, "The Pathophysiology of Acute and Chronic Right Ventricular Failure", American Thoracic Society, Post-Graduate Course, San Diego, CA
- 5/18/14 Speaker, "The Relationship between Right Ventricular Wall Thickness and Contractility in Pulmonary Arterial Hypertension", American Thoracic Society, San Diego, CA
- 6/20/14 Speaker, "The Connection between Connective Tissue Disease and Pulmonary Hypertension", 11<sup>th</sup> Pulmonary Hypertension Association Biennial Meeting, Indianapolis, IN
- 10/24/14 Speaker, "A Dangerous Intersection: Arrhythmias in PAH", American College of Chest Physicians Annual Meeting, Austin, TX
- 10/26/14 Speaker, "Management of Acute Right Heart Failure in Pulmonary Hypertension", American College of Chest Physicians Annual Meeting, Austin, TX
- 10/27/14 Speaker, "Management of Pulmonary Arterial Hypertension: What Do the New Guidelines Tell Us?", Morning Educational Symposium, American College of Chest Physicians Annual Meeting, Austin, TX
- 3/6/15 Speaker, "Diagnosing PAH: Current Challenges and Insights", 14<sup>th</sup> International Pulmonary Hypertension Forum. Copenhagen, Denmark
- 10/26/15 Speaker, "Prognosis of PAH: Assessment of RV Function", American College of Chest Physicians Annual Meeting, Montreal, Canada
- 10/27/15 Speaker, "Developing Strategies to Treat Pulmonary Hypertension", American College of Chest Physicians Annual Meeting, Montreal, Canada
- 10/27/15 Speaker, "The Right Place: Management of Right Ventricular Failure in the ICU", American College of Chest Physicians Annual Meeting, Montreal, Canada
- 10/30/17 "Patient-Centered Outcomes in Pulmonary Hypertension", NetWork Featured Lecture, American College of Chest Physicians Annual Meeting, Toronto, Canada

**OTHER PROFESSIONAL ACCOMPLISHMENTS - None**