

CURRICULUM VITAE
Johns Hopkins University School of Medicine



Lonny Yarmus, DO, MBA

September, 2023

DEMOGRAPHIC AND PERSONAL INFORMATION

Current Appointments

2022-present Professor of Medicine, Johns Hopkins University School of Medicine
2022-present Professor of Oncology, Johns Hopkins University School of Medicine
2023-present Vice Chair, Department of Medicine, Clinical Business Development and Strategic Planning
2023-present Chief Medical Officer, The Four Seasons Resorts and Johns Hopkins International Lead with Care
2014-present Director, Interventional Pulmonology, Johns Hopkins University School of Medicine

Personal Data

Division of Pulmonary and Critical Care Medicine
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Education and Training

Undergraduate

1994 Bachelor of Arts., Emory University, Atlanta, GA

Doctoral/Graduate

1995-1997 Health Careers Postbaccalaureate, Harvard University, Boston, MA
1999-2003 Doctor of Osteopathy, University of New England, Biddeford, ME
2013-2018 Masters of Business Administration, Johns Hopkins University Carey School of Business

Postdoctoral

2003-2004 Intern, Internal Medicine, Tufts Univ School of Medicine, Maine Medical Center, Portland, ME
2004-2006 Resident, Internal Medicine, Tufts University Sch of Medicine, Maine Medical Center, Portland, ME
2006-2009 Postdoctoral Fellow, Pulmonary Critical Care Med, Tufts Univ, Maine Medical Center, Portland, ME
2009-2010 Postdoctoral Fellow, Interventional Pulmonology, Pulmonary & Critical Care Med, Johns Hopkins
2010-2011 Science of Clinical Investigation Certificate Program, Johns Hopkins Bloomberg Sch Public Health

Professional Experience

1996-1998 Teaching Fellow, Department of Physics, Harvard University, Boston, MA
1998-1999 Teacher, Department of Physics, North Springs Charter High School, Sandy Springs, GA
2010-2011 Instructor of Medicine, Johns Hopkins University School of Medicine, Baltimore, MD
2011-2015 Fellowship Program Director, Interventional Pulmonary, Division of Pulmonary and Critical Care, Johns Hopkins University School of Medicine, Baltimore, MD
2011-2015 Assistant Professor of Medicine, Johns Hopkins University School of Medicine, Baltimore, MD
2012-present Instructor, Pulmonary Section, Second Year Medical School Curriculum, Genes-to-Society Course, Johns Hopkins University School of Medicine, Baltimore, MD
2014-2023 Clinical Director, Division of Pulmonary and Critical Care Medicine, Johns Hopkins University School of Medicine, Baltimore, MD
2015-2022 Associate Professor of Medicine, Johns Hopkins University School of Medicine, Baltimore, MD
2017-2022 Associate Professor of Oncology, Johns Hopkins University School of Medicine, Baltimore, MD
2014-2023 Clinical Director, Division of Pulmonary and Critical Care Medicine, Johns Hopkins University

PUBLICATIONS

Original Research [OR]

1. Restrepo A, Johnson TC, Widjaja D, **Yarmus L**, Meyer K, Clain DJ, Bodenheimer HC Jr, Min AD. The rate of treatment of HCV in patients co-infected with HIV. *J Viral Hepatology*. 2005 Jan 12(1): 86-90.
2. **Yarmus L**, Napier M, Van der Kloot T, Feller-Kopman D. A Randomized Prospective Trial of Rapid On-Site Transbronchial Needle Aspirate Specimens. *J Bronchol Interv Pulmonol*. 2011 Apr;18(2):121-127.
3. Harvey C, Thimmulappa R, Sethi S, **Yarmus L**, Feller-Kopman D, Wise R, Biswal S. Targeting Nrf2 signaling improves bacterial clearance by alveolar macrophages in patients with COPD and in a mouse model. *Sci Transl Med*. 2011 Apr 13;3(78):78ra32.
4. Ost D, Ernst A, Lei X, Feller-Kopman D, **Yarmus L**, Simoff M. Diagnostic Yield of Endobronchial Ultrasound Guided Transbronchial Needle Aspiration: Results of the AQUIRE Registry. *Chest*. 2011 Dec;140(6):1557-1566
served as a founder member of the AQUIRE executive committee and site principal investigator
5. Tsai HC, Li H, Van Neste L, Cai Y, Robert C, Rassool FV, Shin JJ, Harbom KM, Beaty R, Pappou E, Harris J, Yen RW, Ahuja N, Brock MV, Stearns V, Feller-Kopman D, **Yarmus L**, Lin YC, Welm AL, Issa JP, Minn I, Matsui W, Jang YY, Sharkis SJ, Baylin SB, Zahnow CA. Transient Low Doses of DNA-Demethylating Agents Exert Durable Antitumor Effects on Hematological and Epithelial Tumor Cell. *Cancer Cell*. 2012 Mar 20;21(3): 430-446.
6. Eberlein M, Arnaoutakis GJ, **Yarmus L**, Feller-Kopman D, Dezube R, Chahla MF, Bolukbas S, Reed RM, Klesney-Tait J, Parekh KR, Merlo CA, Shah AS, Orens JB, Brower RG. The effect of lung size mismatch on complications and resource utilization after bilateral lung transplantation. *J Heart Lung Transplant*. 2012 May; 31(5):492-500.
7. **Yarmus L**, Pandian V, Gilbert C, Schiavi A, Haider A, Chi A, Morad A, Miller C, Efron D, Stevens K, Gangidi S, Vaswani R, Haut E, Mirski M, Bhatti N, Feller-Kopman D. Safety and efficiency of interventional pulmonologists performing percutaneous tracheostomy. *Respiration*. 2012 Jun; 84(2):123-7.
8. Mirski MA, Pandian V, Bhatti N, Haut E, **Yarmus L**, D, Morad A, Haider A, Schiavi A, Efron D, Ulatowski J. Safety, efficiency, and cost-effectiveness of a multidisciplinary percutaneous tracheostomy program. *Crit Care Med*. 2012 Jun;40(6):1827-34.
9. Yung RC, Otell S, Illei P, Clark DP, Feller-Kopman D, **Yarmus L**, Askin F, Gabrielson E, Li QK. Improvement of cellularity on cell block preparations using the so-called tissue coagulum clot method during endobronchial ultrasound-guided transbronchial fine-needle aspiration. *Cancer Cytopathol*. 2012 Jun 25;129(3):185-195.
10. **Yarmus L**, Gilbert C, Akulian J, Feller-Kopman D. 2012. Novel Use of the Glide Scope for Rigid bronchoscopic placement of a Dynamic Y stent. *Annals of Thoracic Surgery*. 2012 Jul;94(1):308-10.
11. Pandian V, Gilstrap DL, Mirski MA, Haut ER, Haider AH, Efron DT, Bowman NM, **Yarmus LB**, Bhatti NI, Stevens KA, Vaswani R, Feller-Kopman D. Predictors of short-term mortality in patients undergoing percutaneous dilatational tracheostomy. *J Crit Care*. 2012 Aug;27(4): 420.e9-15.
12. Pandian V, Miller CR, Mirski MA, Schiavi AJ, Morad AH, Vaswani RS, Kalmar CL, Feller-Kopman DJ, Haut ER, **Yarmus LB**, Bhatti NI. Multidisciplinary team approach in the management of tracheostomy patients. *Otolaryngol Head Neck Surg*. 2012 Oct; 147(4):684-691.
13. **Yarmus LB**, Akulian J, Gilbert C, Illei P, Dedhiya P, Merlo CA, Orens JB, Feller-Kopman D. Cryoprobe transbronchial lung biopsy in lung transplant patients: A Safety Pilot. *Chest*. 2013 Mar;143(3):621-6.
First study investigating a novel approach to assess host rejection in lung transplantation patients
14. Akulian J, **Yarmus L**, Feller-Kopman D. The evaluation and clinical application of pleural physiology. *Clin Chest Med*. 2013 Mar;34(1):11-9.
15. **Yarmus LB**, Akulian JA, Gilbert C, Mathai SC, Sathiyamoorthy S, Sahetya S, Harris K, Gillespie C, Haas A, Feller-Kopman D, Serman D, Lee HJ. Comparison of moderate vs. deep sedation for endobronchial ultrasound transbronchial needle aspiration. *Ann Am Thoracic Soc*. 2013 Apr; 10(2):121-126.
16. Eapen GA, Shah AM, Lei X, Jimenez CA, Morice RC, **Yarmus L**, Filner J, Ray C, Michaud G, Greenhill SR, Sarkiss M, Casal R, Rice D, Ost DE. Complications, consequences, and practice patterns of endobronchial ultrasound-guided transbronchial needle aspiration: Results of the AQUIRE registry. *Chest*. 2013 Apr;143(4): 1044-53.
17. **Yarmus LB**, Akulian J, Lechtzin N, Yasin F, Kamdar B, Ernst A, Ost DE, Ray C, Greenhill SR, Jimenez CA, Filner J, Feller-Kopman D. Comparison of 21-gauge and 22-gauge aspiration needle in endobronchial

- ultrasound-guided transbronchial needle aspiration: results of the American College of Chest Physicians Quality Improvement Registry, Education, and Evaluation Registry. *Chest*. 2013 Apr;143(4):1036-43.
18. Feller-Kopman D, Brigham E, Lechtzin N, **Yarmus L**. Training perspective: The Impact of starting an EBUS Program at a major academic center on Fellows' training of TBNA. *Ann Am Thorac Soc*. 2013 Apr;10(2):127-30.
19. Gilbert C, Akulian J, Feller-Kopman D, **Yarmus L**. Ergonomics and Bronchoscopy: A Survey of the American Association of Bronchology and Interventional Pulmonology. *J Bronchology Interv Pulmonol*. 2013 Apr;20(2):113-20.
20. Lee H, Feller-Kopman D, Shepherd RW, Almeida F, Bechara R, Berkowitz D, Chawla M, Folch E, Gillespie C, Haas A, Lee R, Majid A, Malhotra R, Musani A, Puchalski J, Sterman D, **Yarmus L**. Validation of an Interventional Pulmonary examination. *Chest*. 2013 Jun;143(6):1667-70.
21. De Souza Lawrence L, Ford E, Gilbert C, **Yarmus LB**, Meneshian A, Feller-Kopman D, Hales R. Novel applications of an injectable radio-opaque hydrogel tissue marker for management of thoracic malignancies. *Chest*. 2013 Jun;143(6):1635-41.
22. **Yarmus L**, Feller-Kopman D, Imad M, Kim S, Lee H. Procedural Volume and Structure of Interventional Pulmonary Fellowships: A Survey of Fellows and Fellowship Program Directors. *Chest*. 2013 Sep;144(3):935-9 *This study resulted in efforts to standardize curricula across all IP fellowships nationwide*
23. Gilbert C, Akulian J, Feller-Kopman D, Hayes M, **Yarmus L**. Interventional Pulmonology Procedures in the Pediatric Population. *Pediatr Pulmonol*. 2014. Jun;49(6):597-604.
24. **Yarmus LB**, Gilbert C, Lechtzin N, Imad M, Ernst A, Feller-Kopman D. The safety and feasibility of Interventional Pulmonologists performing bedside percutaneous endoscopic gastrostomy tube placement. *Chest*. 2013 Aug;144(2):436-40.
25. Zarogoulidis P, Petridis D, Ritzoulis C, Darwiche K, Spyrtos D, Huang H, Goldberg EP, **Yarmus L**, Li Q, Freitag L, Zarogoulidis K. Establishing the optimal nebulization system for paclitaxel, docetaxel, cisplatin, carboplatin and gemcitabine: Back to drawing the residual cup. *Int J Pharm*. 2013 Sep 10;453(2):480-7.
26. Gilbert CR, Chen A, Akulian JA, Lee HJ, Wahidi M, Argento AC, Tanner NT, Pastis NJ, Harris K, Sterman D, Toth JW, Chenna PR, Feller-Kopman D, **Yarmus L**. The use of convex probe endobronchial ultrasound-guided transbronchial needle aspiration in a pediatric population: A multicenter study. *Pediatr Pulmonol*. 2014. Aug;49(8):807-15.
27. Sussan TE, Ingole V, Kim JH, McCormick S, Negherbon J, Fallica J, Akulian J, **Yarmus L**, Feller-Kopman D, Wills-Karp M, Horton MR, Breysse PN, Agrawal A, Juvekar S, Salvi S, Biswal S. Source of Biomass Cooking Fuel Determines Pulmonary Response to Household Air Pollution. *Am J Respir Cell Mol Biol*. 2014. Mar;50(3):538-48.
28. Zarogoulidis P, Petridis D, Ritzoulis C, Darwiche K, Kioumis I, Porpodis K, Spyrtos D, Hohenforst-Schmidt W, **Yarmus L**, Huang H, Li Q, Freitag L, Zarogoulidis K. Internal mouthpiece designs as a future perspective for enhanced aerosol deposition. Comparative results for aerosol chemotherapy and aerosol antibiotics. *Int J Pharm*. 2013 Nov 18;456(2):325-31
29. Fysh ET, Tremblay A, Feller-Kopman D, Mishra EK, Slade M, Garske L, Clive AO, Lamb C, Boshuizen R, Ng BJ, Rosenstengel AW, **Yarmus L**, Rahman NM, Maskell NA, Lee YC. Clinical Outcomes of Indwelling Pleural Catheter-Related Pleural Infections: an international multicenter study. *Chest*. 2013 Nov;144(5):1597-1602.
30. Akulian J, **Yarmus L**, Feller-Kopman D. Tissue acquisition and specimen processing in the diagnosis of NSCLC. *Semin Respir Crit Care Med*. 2013 Dec;34(6):787-91.
31. **Yarmus L**, Akulian J, Gilbert C, Feller-Kopman D, Lechtzin N, Ali S, Sathiyamoorthy V. Optimizing Endobronchial Ultrasound for Molecular Analysis: How many passes are needed? *Ann Am Thorac Soc*. 2013 Dec;10(6):636-43.
32. Hohenforst-Schmidt W, Banckwitz R, Zarogoulidis P, Vogl T, Darwiche K, Goldberg E, Huang H, Simoff M, Li Q, Browning R, Freitag L, Turner JF, Pivert PL, **Yarmus L**, Zarogoulidis K, Brachmann J. Radiation Exposure of Patients by Cone Beam CT during Endobronchial Navigation - A Phantom Study. *J Cancer*. 2014 Feb 6;5(3):192-202.
33. Hohenforst-Schmidt W, Zarogoulidis P, Linsmeier B, Kioumis I, Li Q, Huang H, Sachpatzidou D, Lampaki S, Organtzis J, Domvri K, Sakkas L, Zachariadis GA, Archontas KN, Kallianos A, Rapti A, **Yarmus L**, Zarogoulidis K, Brachmann J. Enhancement of Aerosol Cisplatin Chemotherapy with Gene Therapy Expressing ABC10 protein in Respiratory System. *Cancer*. 2014 Mar 24;5(5):344-50.

34. Akulian J, Feller-Kopman D, Lee H, **Yarmus L**. Advances in interventional pulmonology. *Expert Rev Respir Med*. 2014 Apr;8(2):191-208.
35. Tsiouda T, Zarogoulidis P, Petridis D, Pezirkianidis N, Kioumis I, **Yarmus L**, Huang H, Li Q, Hohenforst-Schmidt W, Porpodis K, Spyratos D, Tsakiridis K, Pitsiou G, Kontakiotis T, Argyropoulou P, Kyriazis G, Zarogoulidis K. A multifactorial analysis of 1452 patients for smoking sensation. An outpatient lab experience. *J Cancer*. 2014 May 10;5(6):433-45.
36. Gilbert C, Akulian J, Ortiz R, Lee H, **Yarmus L**. Novel bronchoscopic strategies for the diagnosis of peripheral lung lesions: present techniques and future directions. *Respirology*. 2014 Jul;19(5):636-44.
37. Sorokina A, Danilevskaya O, Averyanov A, Zabozaev F, Sazonov D, **Yarmus L**, Lee HJ. Comparative study of ex vivo probe-based confocal laser endomicroscopy and light microscopy in lung cancer diagnostics. *Respirology*. 2014 Aug;19(6):907-13.
38. Zarogoulidis P, Kioumis I, Lampaki S, Organtzis J, Porpodis K, Spyratos D, Pitsiou G, Petridis D, Pataka A, Huang H, Li Q, **Yarmus L**, Hohenforst-Schmidt W, Pezirkianidis N, Zarogoulidis K Optimization of nebulized delivery of linezolid, daptomycin, and vancomycin aerosol. *Drug Des Dev Ther*. 2014 August:8 Pages 1065-1072.
39. Pandian V, Miller CR, Schiavi AJ, **Yarmus L**, Contractor A, Haut ER, Feller-Kopman DJ, Mirski MA, Morad AH, Carey JP, Hillel AT, Maragos CS, Bhatti NI. Utilization of a standardized tracheostomy capping and decannulation protocol to improve patient safety. *Laryngoscope*. 2014 Aug;124(8):1794-800.
40. Lithoxopoulou H, Zarogoulidis K, Bostantzopoulou S, Eleftheriadou E, Zarogoulidis P, Huang H, Porpodis K, Kioumis I, Tsiouda T, **Yarmus L**, Kontakiotis T. Monitoring changes in quality of life in patients with lung cancer by using specialised questionnaires: implications for clinical practice. *Support Care Cancer*. 2014 Aug;22(8):2177-83.
41. **Yarmus L**, Lee H, Kidd D, Ortiz R, Thompson R, Akulian J, Gilbert C, Hughes A, Arias S, Feller-Kopman D. Comparison of Pleural Pressure Measuring Instruments. *Chest*. 2014. Oct;146(4):1007-12.
42. Pandian V, Smith CP, Cole TK, Bhatti NI, Mirski MA, **Yarmus LB**, Feller-Kopman DJ. Optimizing Communication in Mechanically Ventilated Patients. *J Med Speech Lang Pathol*. 2014;21(4):309-318.
43. Feller-Kopman D, **Yarmus L**. Interventional pulmonology. *Semin Respir Crit Care Med*. 2014. Dec;35(6):629-30.
44. Lee HJ, Feller-Kopman D, Islam S, Majid A, **Yarmus L**. Analysis of Employment Data for Interventional Pulmonary Fellowship Graduates. *Ann Am Thorac Soc*. 2015 Apr;12(4):549-52.
45. Arias S, Lee H, Semaan R, Frimpong B, Ortiz R, Feller-Kopman D, Oakjones-Burgess K, **Yarmus L**. Use of Electromagnetic Navigational Transthoracic Needle Aspiration (E-TTNA) for Sampling of Lung Nodules. *J Vis Exp*. 2015 May 23;(99):e52723.
46. Ost DE, Ernst A, Grosu HB, Lei X, Diaz-Mendoza J, Slade M, Gildea TR, Machuzak MS, Jimenez CA, Toth J, Kovitz KL, Ray C, Greenhill S, Casal RF, Almeida FA, Wahidi MM, Eapen GA, Feller-Kopman D, Morice RC, Benzaquen S, Tremblay A, Simoff M; **AQuIRE Bronchoscopy Registry**. Therapeutic bronchoscopy for malignant central airway obstruction: success rates and impact on dyspnea and quality of life. *Chest*. 2015 May; 147(5):1282-1298.
47. Gilbert, C; Lee, Hans; Feller-Kopman; **Yarmus, L**. A Quality Improvement Intervention to Reduce Indwelling Tunneled Pleural Catheter Pleural Infection Rates. *Ann Am Thorac Soc*. 2015. Jun;12(6):847-53. **Results led to international changes in the standard of care during tunneled pleural catheter placement**
48. Shafiq M, Frick KD, Lee H, **Yarmus L**, Feller-Kopman DJ. Management of Malignant Pleural Effusion: A Cost-Utility Analysis. *J Bronchol Interv Pulmonol*. 2015 Jul;22(3):215-25.
49. Ost D, Ernst A Grosu H, Lei X, Diaz-Mendoza J, Slade M, Gildea T, Machuzak M, Jimenez C, Toth J, Kovitz K, Ray C, Greenhill S, Casal R, Almeida F, Wahidi M, Eapen G, **Yarmus L**, Morice R, Benzaquen S, Simoff M. Complications Following Therapeutic Bronchoscopy for Malignant Central Airway Obstruction: Results of the AQuIRE Registry. *Chest* 2015. Aug 1;148(2):450-71.
50. Gilbert C, Lee H, Maldonado F, Skalski H, Wahidi M, Choi P, Bessich J, Serman D, Argento A, Shojaee S, Gorden J, Wilshire C, Feller-Kopman D, Ortiz R, Nonyane B, **Yarmus, L**. The Use of Indwelling Tunneled Pleural Catheters for Recurrent Pleural Effusions in Patients with Hematologic Malignancies: A Multicenter Study. *Chest* 2015. Sep 1;148(3):752-758.
51. Thomas R, Piccolo F, Miller D, MacEachern P, Chee, A, Husein, **Yarmus L**; Bhatnagar R, Lee HJ, Feller-Kopman D, Maskell N, Tremblay A, Lee YC. Intrapleural Fibrinolysis for the Treatment of Indwelling Pleural Catheter-Related Symptomatic Loculations – A Multi-Center Observational Study. *Chest* 2015. Sep 1;148(3):746-51.

52. **Yarmus L**, Akulian J, Ortiz R, Thompson R, Oakjones-Burgess K, Arias S, Semaan R, Feller-Kopman D, Lee H, Wang KP. A randomized controlled trial evaluating airway inspection effectiveness during endobronchial ultrasound bronchoscopy. *J Thorac Dis*. 2015 Oct;7(10):1825-32.
53. Ost DE, Ernst A, Lei X, Kovitz KL, Benzaquen S, Diaz-Mendoza J, Greenhill S, Toth J, Feller-Kopman D, Puchalski J, Baram D, Karunakara R, Jimenez CA, Filner JJ, Morice RC, Eapen GA, Michaud GC, Estrada-Y-Martin RM, Rafeq S, Grosu HB, Ray C, Gilbert CR, **Yarmus L**, Simoff M. Diagnostic Yield and Complications of Bronchoscopy for Peripheral Lung Lesions: Results of the AQUiRE Registry. *Am J Respir Crit Care Med*. 2016 Jan 1;193(1):68-77.
54. **Yarmus LB**, Arias S, Feller-Kopman D, Semaan R, Wang KP, Frimpong B, Oakjones Burgess K, Thompson R, Chen A, Ortiz R, Lee HJ. Electromagnetic navigation transthoracic needle aspiration for the diagnosis of pulmonary nodules: a safety and feasibility pilot study. *J Thorac Dis*. 2016 Jan;8(1):186-94.
First in human report of a novel minimally invasive approach to lung cancer diagnostics
55. Hohenforst-Schmidt W, Zarogoulidis P, Steinheimer M, Benhassen N, Tsiouda T, Baka S, **Yarmus L**, Stratakis G, Organtzis J, Pataka A, Tsakiridis K, Karapantzios I, Karapantzu C, Darwiche K, Zissimopoulos A, Pitsiou G, Zarogoulidis K, Man YG, Rittger H. Tyrosine Kinase Inhibitors for the Elderly. *J Cancer*. 2016 Mar 21;7(6):687-93.
56. Semaan RW, Hazbon MP, Arias SA, Lerner AD, **Yarmus LB**, Feller-Kopman DJ, Lee HJ. Academic Productivity of Interventional Pulmonology Training Programs. *Ann Am Thorac Soc*. 2016 Apr;13(4):536-9
57. Gilbert CR, Casal RF, Lee HJ, Feller-Kopman D, Frimpong B, Dincer HE, Podgaetz E, Benzaquen S, Majid A, Folch E, Gorden JA, Chenna P, Chen A, Abouzgheib W, Sanny Nonyane BA, **Yarmus LB**. Use of One-Way Intrabronchial Valves in Air Leak Management After Tube Thoracostomy Drainage. *Ann Thorac Surg*. 2016 May;101(5):1891-6.
58. **Yarmus LB**, Semaan RW, Arias SA, Feller-Kopman D, Ortiz R, Bösmüller H, Illei PB, Frimpong BO, Oakjones-Burgess K, Lee HJ. A Randomized Controlled Trial of a Novel Sheath Cryoprobe for Bronchoscopic Lung Biopsy in a Porcine Model. *Chest*. 2016 Aug;150(2):329-36.
First report and evaluation of a new invention of a minimally invasive device. Accompanying editorial published highlighting the potential impact of this novel approach
59. Krochmal R, Reddy C, **Yarmus L**, Desai NR, Feller-Kopman D, Lee HJ. Patient evaluation for rapid pleurodesis of malignant pleural effusions. *J Thorac Dis*. 2016 Sep;8(9):2538-2543.
60. Arias S, Liu QH, Frimpong B, Lee H, Feller-Kopman D, **Yarmus L**, Wang KP. Role of the Endobronchial Landmarks Guiding TBNA and EBUS-TBNA in Lung Cancer Staging. *Can Respir J*. 2016;1652178.
61. Semaan RW, Lee HJ, Feller-Kopman D, Lerner AD, Mallow CM, Thiboutot J, Arias SA, **Yarmus LB**. Same-Day Computed Tomographic Chest Imaging for Pulmonary Nodule Targeting with Electromagnetic Navigation Bronchoscopy May Decrease Unnecessary Procedures. *Ann Am Thorac Soc*. 2016 Dec;13(12):2223-2228.
62. Pandian V, Hutchinson CT, Schiavi AJ, Feller-Kopman DJ, Haut ER, Parsons NA, Lin JS, Gorbatskin C, Angamuthu PG, Miller CR, Mirski MA, Bhatti NI, **Yarmus LB**. Predicting the need for nonstandard tracheostomy tubes in critically ill patients. *J Crit Care*. 2017 Feb; 37:173-178.
63. Scholten EL, Semaan R, Illei P, Mallow C, Arias S, Feller-Kopman D, Oakjones-Burgess K, Frimpong B, Ortiz R, Lee H, **Yarmus L**. Stylet Usage Does Not Improve Diagnostic Outcomes in Endobronchial Ultrasound Transbronchial Needle Aspiration: A Randomized Clinical Trial. *Chest*. 2017 Mar;151(3):636-642.
64. Wahidi MM, Reddy C, **Yarmus L**, Feller-Kopman D, Musani A, Shepherd RW, Lee H, Bechara R, Lamb C, Shofer S, Mahmood K, Michaud G, Puchalski J, Rafeq S, Cattaneo SM, Mullon J, Leh S, Mayse M, Thomas SM, Peterson B, Light RW. Randomized Trial of Pleural Fluid Drainage Frequency in Patients with Malignant Pleural Effusions-The ASAP Trial. *Am J Respir Crit Care Med*. 2017 Apr 15;195(8):1050-1057.
65. O'Connell OJ, Almeida FA, Simoff MJ, **Yarmus L**, Lazarus R, Young B, Chen Y, Semaan R, Saettele TM, Cicienia J, Bedi H, Kliment C, Li L, Sethi S, Diaz-Mendoza J, Feller-Kopman D, Song J, Gildea T, Lee H, Grosu HB, Machuzak M, Rodriguez-Vial M, Eapen GA, Jimenez CA, Casal RF, Ost DE. A Prediction Model to Help with the Assessment of Adenopathy in Lung Cancer (HAL). *Am J Respir Crit Care Med*. 2017 Jun 15;(12):1651-1660.
66. Zarogoulidis P, Huang H, Bai C, Petridis D, Papadopoulou S, Faniadou E, Eleftheriadou E, Trakada G, Cristoforos K, Rapti A, **Yarmus L**, Kopman DF, Man YG, Hohenforst-Schmidt W. Nab-paclitaxel as First Line Treatment for NSCLC in Elderly Patients More Than 75 Years Old. *J Cancer*. 2017 Jun 4;8(9):1673-78.
67. Belanger AR, Nguyen K, Osman U, Gilbert CR, Allen K, Al Rais AF, **Yarmus L**, Akulian JA. Pleural effusions in non-transplanted cystic fibrosis patients. *J Cyst Fibros*. 2017 Jul;16(4):499-502.

68. Lee HJ, Coleman B, Lerner AD, Feller-Kopman D, Semaan R, Frimpong B, **Yarmus L**. Procedural Learning Perspectives of Pulmonary Fellows and Practitioners. *J Bronchol Interv Pulmonol*. 2017 Jul;24(3):200-205
69. Munoz ML, Lechtzin N, Li QK, Wang K, **Yarmus LB**, Lee HJ, Feller-Kopman DJ. Bronchoscopy with endobronchial ultrasound guided transbronchial needle aspiration vs. transthoracic needle aspiration in lung cancer diagnosis and staging. *J Thorac Dis*. 2017 Jul;9(7):2178-2185.
70. Yuan W, Brown R, Mitzner W, **Yarmus L**, Li X. Super-achromatic monolithic microprobe for ultrahigh-resolution endoscopic optical coherence tomography at 800 nm. *Nature Commun*. 2017 Nov 16;8(1):1531.
71. Lee HJ, Labaki W, Yu D, Salwen B, Gilbert C, Schneider A, Ortiz R, Feller-Kopman D, Arias S, **Yarmus L**. Airway stent complications: the role of follow-up bronchoscopy as a surveillance method. *J Thorac Dis* 2017 Dec;9(11):4651-4659.
72. Mallow C, Thiboutot J, Semaan R, Hayes MM, Hales R, Ram A, Feller-Kopman D, Lee H, **Yarmus L**. External beam radiation therapy combined with airway stenting leads to better survival in patients with malignant airway obstruction. *Respirology*. 2018 Mar 12. (23) 860-865.
73. Suresh K, Psoter KJ, Voong KR, Shankar B, Forde PM, Ettinger DS, Marrone KA, Kelly RJ, Hann CL, Levy B, Feliciano JL, Brahmer JR, Feller-Kopman D, Lerner AD, Lee H, **Yarmus L**, Hales RK, D'Alessio F, Danoff SK, Naidoo J. Impact of Checkpoint Inhibitor Pneumonitis on Survival in NSCLC Patients Receiving Immune Checkpoint Immunotherapy. *J Thorac Oncol*. 2018 Mar;14(3):494-502.
74. Tsukada H, Entcheva-Dimitrov P, Ernst A, Rafeq S, Keating JH, Seward KP, **Yarmus L**. Pharmacokinetics and safety of paclitaxel delivery into porcine airway walls by a new endobronchial drug delivery catheter. *Respirology*. 2018 Apr;23(4):399-405.
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Books, Textbook [BK]

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Guidelines/Protocols, Consensus Statement, Expert Opinion, Consortium Articles [GL]

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Editorials [ED]

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Letters, Correspondence [LT]

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Other Media [OM]

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2. **Yarmus L**, Pneumothorax Pathophysiology and Management, BMJ Best Practice point of care electronic decision tool. 2019
3. **Yarmus L**, Building a Research Program in Interventional Pulmonology, American Association for Bronchology and Interventional Pulmonology webinar 2019

FUNDING

EXTRAMURAL FUNDING

Research Extramural Funding

Current

9/1/15-8/31/23 Biomarker Levels during Indwelling Pleural Catheter Sample Testing
 Rocket Medical

	<p>\$145,361 Role: PI: 1%</p>
9/1/15-8/31/23	<p>Concordance of EGFR Mutational Analysis between Blood and Tissue Biopsy for Metastatic NSCLC Patients Sysmex Inostics, Inc. \$128,488 Role: PI: 1%</p>
2/14/18-1/13/23	<p>Multicenter, Prospective Trial of Electromagnetic Bronchoscopic and Electromagnetic Transthoracic Approaches for the Biopsy of Peripheral Pulmonary Lesions (ALL IN ONE) Veran Medical Technologies, Inc. \$293,978 Role: PI: 1%</p>
3/1/18-2/28/23	<p>Neoadjuvant Nivolumab or Nivolumab in Combination with Ipilimumab in Resectable NSCLC Stand Up 2 Cancer \$43,545 Role: Co-PI: 5%</p>
4/1/18-3/31/23	<p>The Impact of a Gravity versus Vacuum Based Indwelling Tunneled Pleural Drainage System on Pain: A Multicenter, Randomized Trial Rocket Medical \$320,895 Role: PI: 3%</p>
6/1/18-5/31/23	<p>Blood Sample Collection in Subjects with Pulmonary Nodules or CT Suspicion of Lung Cancer Exact Sciences \$184,836 Role: PI: 1%</p>
3/1/20-2/28/23	<p>A Phase 2 randomized, placebo-controlled, double-blind, dose-ranging study evaluating LTI-01 (single-chain urokinase plasminogen activator, scuPA) in patients with infected, non-draining pleural effusions Lung Therapeutics, Inc. \$112,345 Role: PI: 1%</p>
4/1/20-6/30/24	<p>Safety of a Sheath Cryoprobe Bronchoscopic Transbronchial Biopsy Technique (The FROSTBITE Trial) ERBE USA, Incorporated \$91,933 Role: PI: 1%</p>
4/1/20-3/31/24	<p>A multicenter, randomized controlled trial, prospectively evaluating the clinical utility of the Nodify XL2 proteomic classifier in incidentally discovered low to moderate risk lung nodules Biodesix, Inc. \$74,060 Role: PI: 1%</p>
4/1/21-3/31/23	<p>Full-Field Optical Coherence Tomography (FFOCT) for Evaluation of Bronchoscopic Small Biopsy Specimens Aquyre Biosciences, Inc.</p>

	<p>\$41,850 PI: Thiboutot Role: Co-Investigator: 1%</p>
5/1/20-6/30/23	<p>SEER-Lung: A Prospective Blood Sample Collection Study to Develop and Validate a Panel of Protein-based Biomarkers in Patients with Pulmonary Nodules Seer, Inc. \$284,257 Role: PI: 1%</p>
7/1/21-6/30/26	<p>Liquid Biopsy of Solitary Pulmonary Nodule with Extracellular Vesicles NIH R01CA255948-01A1 Directs: \$1,879,110 PI: Wan Role: Co-Investigator: 5%</p>
8/1/22-7/31/26	<p>Randomized Controlled Trial of EBUS with or without Rapid Onsite Evaluation Astra Zeneca, Inc \$875,435 Role: PI: 5%</p>
8/1/22-7/31/24	<p>Randomized Controlled Trial of Cryobiopsy versus Forceps for Bronchoscopic Biopsy of the Lung Erbe, Inc \$784.387 Role: PI: 5%</p>
Previous 10/1/07-7/31/09	<p>A Randomized Prospective Trial of Rapid On Site Evaluation of Transbronchial Needle Aspirate Specimens Maine Medical Center Research Committee \$10,200 Role: PI: 1%</p>
6/22/10-12/31/13	<p>Randomized Trial of Pleural Fluid Drainage Frequency in Patients with Malignant Pleural Effusions. The ASAP Trial Duke University / CareFusion Inc. \$28,015 Role: PI: 1%</p>
7/1/11-6/30/12	<p>A Survey of Dedicated Interventional Pulmonology Fellowships in the United States American Association of Bronchology and Interventional Pulmonology \$3,000 Role: PI</p>
1/1/12-12/31/17	<p>Targeting inflammation in COPD Cureveda, Inc. \$32,061 Role: PI: 1%</p>
2/1/13-7/10/13	<p>Lung Volume Reduction Coil Treatment in Patients with Emphysema PneumRx, Inc \$292,632 Role: PI: 1%</p>

3/15/13-3/14/14	Airway Stenosis after Undergoing Lung Transplant (ASSAULT) American Association of Bronchology and Interventional Pulmonology \$10,000 Role: PI: 1%
7/1/13-6/30/14	The Analysis of the EBUS scope as a Hybrid Bronchoscope Fuji Corporation \$65,000 Role: PI 1%
7/1/13-6/30/17	Early diagnosis of pulmonary nodules using a plasma proteomic classifier Integrated Diagnostics \$126,254 Role: PI: 5%
9/12/13-12/31/14	An Open-label Study to Evaluate Plasma and Pulmonary Pharmacokinetics Following Intravenous Administration of GSK2140944 in Healthy Adult Subjects Paraxel / Glaxo Smith Klein \$31,650 Role: PI: 1%
1/1/14 – 6/30/14	MouthLab Optimization Maryland Innovation Initiative \$11,690 PI: Gene Fridman Role: Co-Investigator
3/15/14-3/14/15	Treatment of Airway Stenosis after Undergoing Lung Transplant American Association of Bronchology and Interventional Pulmonology \$25,000 Role: PI: 1%
7/1/14-6/30/17	Randomized Controlled Trial of EBUS Needles for Molecular Assessment Cook Medical \$68,320 Role: PI: 1%
8/1/14-7/31/17	Broncho-adventitial Drug Delivery: Paclitaxel for Bronchial Carcinoma NIH/NCI 2R42CA141907-02 \$138,156 Role: PI: 10%; <i>*First Interventional Pulmonary NIH grant ever awarded*</i>
12/17/14-3/16/19	A Multi-center, prospective, randomized trial of bronchoscopy with the ultrathin bronchoscope and radial Endobronchial ultrasound with fluoroscopy versus standard fiber optic bronchoscopy with fluoroscopy for biopsy of pulmonary function Medical University of South Carolina (sub-award) \$36,820.89 PI: Silvestri Role: Co-Investigator: 5%
7/1/16-6/30/18	A Phase III Study Evaluating the Efficacy and Safety of Compared to Placebo and Midazolam in Patients Undergoing Bronchoscopy Paion, UK \$53,663 Role: PI: 5%

8/1/16-7/31/14	<p>Navigational bronchoscopy and transthoracic needle biopsy for the diagnosis of peripheral pulmonary nodules: A safety and feasibility study Veran Medical Technologies \$60,000 Role: PI: 5%</p>
12/1/16-12/31/18	<p>A Pivotal Multi-Center, Randomized, Controlled, Single-Blinded Study Comparing the Silver Nitrate-Coated Indwelling Pleural Catheter (SNCIPC) to the Uncoated PleurX Catheter for the Management of Symptomatic, Recurrent, Malignant Pleural Effusions Becton, Dickenson & Company \$237,467 PI (Hopkins): Feller-Kopman Role: Co-Investigator: 1%</p>
6/1/16-6/1/21	<p>A Phase 3, Open-Label, Randomized, Parallel Group Study to Evaluate the Efficacy and Safety of Intrapleural Administration of Adenovirus-Delivered Interferon Alpha-2b (rADIFN) in Combination with Celecoxib and Gemcitabine in Patients with Malignant Pleural Mesothelioma Infinite / Trizel \$179,335 PI (Hopkins): Feller-Kopman Role: Co-Investigator: 5%</p>
7/1/16-6/30/21	<p>Micro Coherence Imaging Technology for Assessing Obstructive Lung Disease in vivo NIH R01HL121788-01A1 \$2,655,793 PI: Brown Role: Co-Investigator: 10%</p>
6/30/17-5/31/21	<p>NanoSpectrometer Based Lung Cancer Biomarker Discovery and Confirmation Study Nanobeak \$273,056 Role: PI: 5%</p>
5/23/19-4/12/22	<p>Evaluation of the Safety and Efficacy of TLD in Patients with COPD (AIRFLOW-3) Nuvaira, Inc. \$126,735 Role: PI: 5%</p>

Educational Extramural Funding

Current

7/1/09-6/30/28	<p>Multidisciplinary Training Program in Lung Diseases. NIH/NHLBI T32 HL07534 \$6,431,304 PI: Larissa Shimoda, PhD Role: Participating investigator</p>
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CLINICAL ACTIVITIES

Clinical Focus

My clinical focus is strongly rooted in the field of Interventional Pulmonology where my clinical activities are centered on the diagnosis, staging and treatment of lung cancer. Our section is currently the most clinically and academically productive Interventional Pulmonology program in the country, and the first IP training program in the world to transition from a dedicated one-year fellowship program to a two-year program to ensure the academic success of our trainees. Because of our accomplishments, we were designated by the American College of Chest Physicians as a

‘Center of Excellence’ in 2012 and remain the only program in the country to be granted this designation. I serve as PI on multiple prospective multicenter clinical trials in the field and have authored and led multiple international guideline efforts in the field.

Certification

Medical, other state/government licensure

2009-present Maryland Medical License (#H0068282)
 2009-present Maryland Controlled Substances (#O66307)
 2009-present USDEA License (#BY9314915)

Boards, other specialty certifications

2006-2016 Diplomat in Internal Medicine, American Board of Internal Medicine
 2009-2019 Diplomat in Pulmonary Medicine, American Board of Internal Medicine
 2010-2020 Diplomat in Critical Care Medicine, American Board of Internal Medicine
 2014-present Board Certified in Interventional Pulmonology, American Association of Bronchology and Interventional Pulmonology
 2019-present Board Certified in Internal Medicine, National Board of Physicians and Surgeons
 2019-present Board Certified in Pulmonary Medicine, National Board of Physicians and Surgeons
 2019-present Board Certified in Critical Care Medicine, National Board of Physicians and Surgeons

Clinical (Service) Responsibilities

2010-present Director, Interventional Pulmonology, Attending Physician on the Interventional Pulmonology Service, Johns Hopkins Hospital (15%)
 2010-2019 Critical Care Medicine, Attending in the Medical Intensive Care Unit, Critical Care Medicine, Johns Hopkins Hospital (5%)
 2009-2011 Critical Care Medicine, Attending in the Cardiothoracic Intensive Care Unit (15%)
 2013-present Director, Solitary Pulmonary Nodule Clinic (5%), Johns Hopkins Bayview (15%)
 2013-2023 Attending, Inpatient Medicine Service, Janeway Firm Faculty (2%)
 2014-present Director, Interventional Pulmonology, Attending Physician on the Interventional Pulmonology Service, Johns Hopkins Bayview (15%)

Clinical Program Building/Leadership

2010-present Director, Interventional Pulmonology, Johns Hopkins University School of Medicine
 Responsible for co-directing the program as a whole across the health system, including supervision of the dedicated clinical and research fellows, the research program and administrative needs of the section of Interventional. Because of our accomplishments, we were designated by the American College of Chest Physicians as a ‘Center of Excellence’ in 2012 and remains the only program in the country to be granted this designation.
 2010-2015 Fellowship Program Director, Interventional Pulmonology, Johns Hopkins University School of Medicine - Responsible for creation of a formal IP training curriculum and the first to transition from a dedicated one-year fellowship program to a two-year program to ensure the academic success of our trainees and the Johns Hopkins Medicine tripartite mission. Our section is currently the most academically productive Interventional Pulmonology program in the country, and I am the PI of multiple prospective multicenter clinical trials in the field and have authored and led multiple international guideline efforts in the field.
 2014-present Director, Interventional Pulmonology, Johns Hopkins Bayview- Tasked to direct and build an entirely new Interventional Pulmonary service on the Bayview campus. This effort required business plan creation, funding, capital equipment build and staffing efforts. Since its inception the program has grown annually and exceeded all clinical metric estimates.
 2014-2023 Clinical Director, Division of Pulmonary and Critical Care, Johns Hopkins University School of Medicine- Responsible for direct clinical and operations oversight of over 100 faculty at Johns Hopkins Hospital, Johns Hopkins Bayview, Johns Hopkins Howard County and Johns Hopkins Sibley. During my tenure in this position, I created multiple new service lines within pulmonary and critical care throughout the health system resulting in improved clinical services, patient outcomes and revenue streams with incremental growth annually.

2011-present	Director, Interventional Pulmonology, Johns Hopkins University- Tasked to direct and expand the Interventional Pulmonary service line at Johns Hopkins University. This entails expansion into the national capital region, expansion of thoracic oncology service lines and growth of the robotic bronchoscopy service. The program remains one of the largest research programs with further planned growth to secure dedicated federal funding lines.
2023-present	Chief Medical Officer, The Four Seasons Resorts and Johns Hopkins International Lead with Care- Tasked to lead a comprehensive enterprise health and safety program focused on program planning, design program implementation, monitoring and evaluation and program sustainment with medical advisory support. Serve as the director of the board of advisors including membership from Emergency Management; Infection Control and Emerging Diseases; Occupational and Environmental Health; and Quality and Safety.

EDUCATIONAL ACTIVITIES

Teaching

Classroom instruction

1996-1997	Teaching Fellow, Department of Physics, Harvard University, Boston, MA
2012-2020	Instructor, Pulmonary Section, Second Year Medical School Curriculum, Genes-to-Society Course, Johns Hopkins University School of Medicine, Baltimore, MD

Clinical Instruction

2009-present	Attending Physician, Interventional Pulmonary Consultation Service, 2 months/year, Johns Hopkins
2009-present	Instructor, Intern procedural workshop, Johns Hopkins
2009-present	Instructor, Pulmonary Fellows Introduction to Bronchoscopy, Johns Hopkins
2010-present	Instructor. Anesthesia Critical Care Fellows Introduction to Bronchoscopy, Johns Hopkins
2013-present	Teaching Attending, Osler Firm Faculty, Janeway Service
2015-present	Core Teaching Faculty, Pulmonary and Critical Care Fellowship, Johns Hopkins
2016-present	Housestaff Educator, Johns Hopkins School of Medicine

CME Instruction

JHMI/Regional

2010	Lecturer, Malignant Pleural Effusions, Management of Pleural Disease: 100 th Anniversary of Thoracoscopy, Johns Hopkins University School of Medicine, Baltimore
2011	Lecturer, Thoracic Ultrasound, Anesthesia Critical Care Ultrasound, Johns Hopkins University School of Medicine, Baltimore, MD
2011	Lecturer, Medical Thoracoscopy, 2 nd Annual Management of Pleural Disease, Johns Hopkins University School of Medicine, Baltimore, MD
2012	Lecturer, Introduction to EBUS, EBUS and Advanced Diagnostic Bronchoscopy, Johns Hopkins University School of Medicine, Cambridge, MD
2012	Lecturer, Medical Thoracoscopy. 3 rd Annual Diagnosis and Management of Pleural Disease, Johns Hopkins University School of Medicine, Baltimore, MD
2013	Lecturer, EBUS Anatomy, 2 nd Annual EBUS and Advanced Diagnostic Bronchoscopy. Johns Hopkins University School of Medicine, Cambridge, MD
2013	Lecturer, Bronchoscopy in the ICU, 13 th Annual Update and Board Review Pearls in Pulmonary and Critical Care Medicine, Johns Hopkins University School of Medicine, Cambridge, MD
2013	Lecturer, Percutaneous Tracheostomy Technique, Percutaneous Tracheostomy, Johns Hopkins University School of Medicine, Baltimore, MD
2014	Lecturer, Medical Thoracoscopy, 4 th Annual Diagnosis and Management of Pleural Disease, Pulmonary CME Course, Johns Hopkins University School of Medicine, Baltimore, MD
2014	Lecturer, EBUS Anatomy, 3 rd Annual EBUS and Advanced Diagnostic Bronchoscopy. Johns Hopkins University School of Medicine, Cambridge, MD
2015	Lecturer, Medical Thoracoscopy, 5 th Annual Diagnosis and Management of Pleural Disease, Johns Hopkins University School of Medicine, Baltimore, MD
2015	Lecturer, EBUS Anatomy, 4 th Annual EBUS and Advanced Diagnostic Bronchoscopy. Johns Hopkins University School of Medicine, Cambridge, MD
2016	Lecturer, Medical Thoracoscopy, 6 th Annual Diagnosis and Management of Pleural Disease, Johns Hopkins University School of Medicine, Baltimore, MD

2016 Lecturer, EBUS Anatomy, 5th Annual EBUS and Advanced Diagnostic Bronchoscopy. Johns Hopkins University School of Medicine, Cambridge, MD

2017 Lecturer, Medical Thoracoscopy, 7th Annual Diagnosis and Management of Pleural Disease, Johns Hopkins University School of Medicine, Baltimore, MD

2017 Lecturer, EBUS Anatomy, 6th Annual EBUS and Advanced Diagnostic Bronchoscopy. Johns Hopkins University School of Medicine, Cambridge, MD

2018 Lecturer, Medical Thoracoscopy, 8th Annual Diagnosis and Management of Pleural Disease, Johns Hopkins University School of Medicine, Baltimore, MD

2018 Lecturer, EBUS Anatomy, 7th Annual EBUS and Advanced Diagnostic Bronchoscopy. Johns Hopkins University School of Medicine, Cambridge, MD

2019 Lecturer, Medical Thoracoscopy, 9th Annual Diagnosis and Management of Pleural Disease, Johns Hopkins University School of Medicine, Baltimore, MD

2019 Lecturer, EBUS Anatomy, 8th Annual EBUS and Advanced Diagnostic Bronchoscopy. Johns Hopkins University School of Medicine, Cambridge, MD

2021 Lecturer, Medical Thoracoscopy, 9th Annual Diagnosis and Management of Pleural Disease, Johns Hopkins University School of Medicine, Baltimore, MD

2022 Lecturer, Medical Thoracoscopy, 9th Annual Diagnosis and Management of Pleural Disease, Johns Hopkins University School of Medicine, Baltimore, MD

2022 Lecturer, EBUS Anatomy, 8th Annual EBUS and Advanced Diagnostic Bronchoscopy. Johns Hopkins University School of Medicine, Cambridge, MD

National

2009 Lecturer, Bronchoscopy Year in Review, 12th Annual Update in Pulmonary and Critical Care Medicine, Johns Hopkins University School of Medicine, Bar Harbor, ME

2010 Lecturer, IP Training Experience, Interventional Pulmonology, Henry Ford Hospital, Detroit, MI

2011 Lecturer, Biopsy of the Lung, Pulmonary Nodules, Washington University in St Louis, St Louis. MO

2011 Lecturer, EBUS TBNA, American Thoracic Society, Denver, CO

2011 Lecturer, Pleural Ultrasound, Thoracic Ultrasound, Washington University in St Louis, St Louis. MO

2012 Lecturer, Pleural Manometry, American Thoracic Society, San Francisco, CA

2012 Lecturer, Electromagnetic Navigation, Pulmonary Nodules, Washington University in St Louis, St Louis. MO

2012 Lecturer, Pleural Ultrasound, Thoracic Ultrasound, Washington University in St Louis, St Louis. MO

2013 Lecturer, Biopsy of the Lung, Pulmonary Nodules, Washington University in St Louis, St Louis. MO

2013 Lecturer, Lung Transplant Airway Stenosis, American Thoracic Society, Philadelphia, PA

2013 Lecturer, Pleural Ultrasound, Thoracic Ultrasound, Washington University in St Louis, St Louis. MO

2014 Lecturer, Tissue Samples for Molecular Analysis, Lung Cancer Updates and Pearls. Johns Hopkins University School of Medicine, Chapel Hill, NC

2014 Lecturer, Interventional Pulmonary, 14th Annual Update and Board Review Pearls in Pulmonary and Critical Care Medicine, Johns Hopkins University School of Medicine, Sulphur Springs, WV

2014 Lecturer, A Multi-Disciplinary Approach to Lung Cancer, American Society of Clinical Pathology, Tampa, Florida.

2014 Lecturer, Pleural Updates, American Thoracic Society, San Diego, CA

2015 Lecturer, Biopsy of the Lung, Pulmonary Nodules, Washington University in St Louis, St Louis. MO

2015 Lecturer, Pleural Ultrasound, Thoracic Ultrasound, Washington University in St Louis, St Louis. MO

2015 Lecturer, Interventional Pulmonology, 15th Update and Board Review Pearls in Pulmonary and Critical Care Medicine, Johns Hopkins University School of Medicine, Isle of Palms, SC

2016 Lecturer, Tissue Samples for Molecular Analysis, 2nd Annual Lung Cancer Updates and Pearls. Johns Hopkins University School of Medicine, Chapel Hill, NC

2016 Lecturer, Interventional Pulmonology, 16th Update and Board Review Pearls in Pulmonary and Critical Care Medicine, Johns Hopkins University School of Medicine, Santa Fe, NM

2017 Lecturer, Tissue Samples for Molecular Analysis, 3rd Annual Lung Cancer Updates and Pearls. Johns Hopkins University School of Medicine, Chapel Hill, NC

2017 Lecturer, Advancement in Navigational Bronchoscopy, American Cancer Society, Las Vegas, NV

2017 Lecturer, Interventional Pulmonology, 17th Update and Board Review Pearls in Pulmonary and Critical Care Medicine, Johns Hopkins University School of Medicine, Napa Valley, CA

2018 Lecturer, Tissue Samples for Molecular Analysis, 4th Annual Lung Cancer Updates and Pearls. Johns Hopkins University School of Medicine, Chapel Hill, NC

2018 Lecturer, Cryobiopsy Guidelines, American College of Chest Physicians, San Diego, CA

2018 Lecturer, Navigational Bronchoscopy, Pittsburgh International Lung Conference, Pittsburgh, PA

2019 Lecturer, Tissue Samples for Molecular Analysis, 5th Annual Lung Cancer Updates and Pearls. Johns Hopkins University School of Medicine, Chapel Hill, NC

2019 Lecturer, Specimens and EBUS, American Thoracic Society, Dallas, TX

2019 Lecturer, Innovation in IP, National Innovation Summit, Dallas, TX

2019 Lecturer, Updates in Cryobiopsy, American College of Chest Physicians, San Antonio, TX

2020 Lecturer, Ciaglia Award Lecture: Interventional Pulmonary Outcomes Group, Chicago, IL

2021 Lecturer, Reaching a Peripheral Pulmonary Nodule: When is a Technology Ready to Use? American Thoracic Society, New Orleans, LA

2022 Lecturer, Robotics and Peripheral Lung Access, American Thoracic Society, San Francisco, CA

2022 Lecturer, Optimizing Collection of Minimally Invasive Specimens for Lung Mutation Markers, American Society for Clinical Pathology, Chicago, IL

2022 Lecturer, Defining Diagnostic Yield in the Periphery of the Lung, American College of Chest Physicians, Nashville, TN

International

2010 Lecturer, Basic Bronchoscopy, American College of Chest Physicians / American Association for Bronchology & Interventional Pulmonology, Vancouver, Canada

2012 Lecturer, Interventional in the USA, Asian Pacific Society of Respiriology, Shanghai, China

2013 Lecturer, Airway Stenosis, International Society for Heart and Lung Transplantation Annual Meeting, Montreal, Canada.

2014 Lecturer, EBUS Innovations, World Congress in Interventional Pulmonology, Kyoto, Japan.

2014 Lecturer, Updates in Thoracic Navigation, Chinese Respiratory Society, Shanghai, China

2015 Lecturer, Navigational Bronchoscopy, Korean Pulmonary Society, Juju, South Korea

2016 Lecturer, Navigational Bronchoscopy, Taiwan Pulmonary Society, Taipei, Taiwan

2017 Lecturer, Navigational Bronchoscopy, Malaysian Thoracic Society, Bangkok, Thailand

2018 Lecturer, Navigational Bronchoscopy, Taiwan Thoracic Society, Taipei, Taiwan

2019 Lecturer, Navigational Bronchoscopy, Japanese Thoracic Society, Tokyo, Japan

Workshops/seminars

National

2010 Lecturer, EBUS Bronchoscopy Education, American College of Chest Physicians, Chicago, IL

2010 Lecturer, Difficult Airway, American College of Chest Physicians, Chicago, IL

2011 Lecturer, EBUS, American Thoracic Society, Denver, CO

2011 Lecturer, Pleural Disease, American Thoracic Society, Denver, CO

2012 Lecturer, GAIN NSCLC Regional Summit, American College of Chest Physicians, San Francisco CA

2013 Lecturer, Translational Science, American Association of Bronchology and Interventional Pulmonology, Denver, CO

2013 Lecturer, EMPOWER NSCLC Regional Summit, American College of Chest Physicians, Chicago, IL

2014 Lecturer, Advanced and Therapeutic Bronchoscopy Society of Thoracic Surgeons, NY, NY

2014 Lecturer, Lung Cancer, American Society of Clinical Pathology, Tampa, FL

2015 Lecturer, EBUS, American Society of Clinical Pathology, Tampa, FL

2022 Chair, Defining Diagnostic Yield n of Bronchoscopic Outcomes Research Statement, American Thoracic Society

International

2014 Lecturer, Interventional Pulmonary, Chinese Thoracic Society, Shanghai, China

2015 Lecturer, Interventional Pulmonary, Korean Pulmonary Society, Juju, South Korea

2016 Lecturer, Interventional Pulmonary, Taiwan Pulmonary Society, Taipei, Taiwan

2017 Lecturer, Interventional Pulmonary, Malaysian Thoracic Society, Bangkok, Thailand

2018 Lecturer, Interventional Pulmonary, Taiwan Thoracic Society, Taipei, Taiwan

2019 Lecturer, Interventional Pulmonary, Japanese Thoracic Society, Tokyo, Japan

2022 Lecturer, Advancing Research in Interventional Pulmonology, Florence, Italy

Mentoring

Pre-doctoral Advisees /Mentees

2013-present	Ricardo Ortiz, MS, Research Assistant Interventional Pulmonology, MD, Harvard University School of Medicine on full scholarship, Resident, Plastic Surgery, Massachusetts General Hospital, Boston, MA; OR 33, 35, 45, 49, 52, 53, 55, 63, 70, 101; CR 11
2014-present	David Hasemi, MS, Research Assistant Interventional Pulmonology, MD, University of Pennsylvania School of Medicine, Internal Medicine, Columbia University, NY
2014-present	Alphonso Robles, BA, Research Assistant Interventional Pulmonology, MD, University of Arizona School of Medicine, Med-Peds Residency, Mayo Clinic, Rochester, MN
2015-2016	Julie Ng, MD, Research Assistant Interventional Pulmonology, Internal Medicine, Johns Hopkins University
2016-2018	Ben Salwen, BA, Research Assistant Interventional Pulmonology, Medical Student, Sackler University School of Medicine, Tel Aviv, Israel; OR 70, 76, 82, 89, 97
2017-2018	William Justice, BS, Research Assistant Interventional Pulmonology, Medical Student, Howard University School of Medicine
2016-2020	Alexa Barriere, BA, Research Assistant Interventional Pulmonology, MPH, Johns Hopkins University Bloomberg School of Public Health; OR 76
2018-2019	Anagha Sadasivan, BS, Research Assistant Interventional Pulmonology, Medical Student, University of Florida School of Medicine

Post-doctoral Advisees /Mentees - **indicates fellows graduating during my time as Fellowship Director*

2010-2011	Melhem Imad, MD*, Interventional Pulmonology, Johns Hopkins University School of Medicine, Director of Interventional Pulmonary, East Virginia University Medical School, Norfolk, VA; OR 22, OR 24, CR 9
2011-2012	Christopher Gilbert, DO*, Interventional Pulmonology, Johns Hopkins University School of Medicine, Director of Interventional Pulmonary, Swedish Medical Center, Seattle, WA; OR 7, 10, 13, 15, 17, 21, 23, 24, 26, 31, 33, 35, 45, 48, 51, 54, 58, 70, 74, 76, 89, 94, 95, 97, 99; RA 7, 15; CR 7, 16; BC 4, 5; ED 3, 6, 18; LT 3, 4
2012-2014	Jason Akulian, MD*, Interventional Pulmonology, Johns Hopkins University School of Medicine, Director of Interventional Pulmonary, University of North Carolina, Chapel, NC; OR 10, 13, 14, 15, 17, 19, 23, 26, 30, 31, 33, 35, 40, 52, 58, 76, 80, 83, 85, 92, 94, 99; RA 20; CR 8, 10, 12; ED 4, 10, 15, 18
2013-2014	Christina Argento, MD*, Interventional Pulmonology, Duke University, Director of Interventional Pulmonary, Northwestern University, Chicago, IL; OR 26, 45, 74, 89, 97; RA 23
2013-2017	Molly Hayes, MD*, Director, MICU, Pulmonary and Critical Care Medicine, Director of MICU, Beth Israel Deaconess Hospital, Harvard University School of Medicine, Boston MA; OR 23, 73, 75; CR 1, 11
2013-present	Eric Scholten, MD*, Internal Medicine, Johns Hopkins University School of Medicine, Pulmonary and Critical Care postdoctoral fellow, University of California San Diego; OR 63
2013-present	Sixto A. Arias, MD*, Interventional Pulmonology, Johns Hopkins University School of Medicine, Director of Interventional Pulmonary, University of Miami School of Medicine, FL; OR 33, 49, 52, 53, 55, 56, 60, 63, 65, 70, 82, 101; RA 16, 23; CR 11, 13, 15; BC 6
2013-present	Roger Samuels, MD, MPH*, Internal Medicine, Johns Hopkins University School of Medicine, Johns Hopkins University School of Medicine, Pulmonary and Critical Care postdoctoral fellow, Johns Hopkins University School of Medicine, Baltimore, MD
2014-present	Sarina Sahetya, MD*, Internal Medicine, Johns Hopkins University School of Medicine, Johns Hopkins University School of Medicine, Pulmonary and Critical Care postdoctoral fellow, Johns Hopkins University School of Medicine, Baltimore, MD; OR 15, OR 77
2014-present	Roy Semaan, MD*, Interventional Pulmonology, Johns Hopkins University School of Medicine Interventional Pulmonology, Director of Interventional Pulmonology, University of Pittsburgh, Pittsburgh, PA; OR 49, 52, 53, 55, 60, 62, 63, 66, 73, 75, 76, 82, 85; RA 21, 22; CR 15; ED 7, 8
2015-present	Andrew Lerner, MD*, Interventional Pulmonology, Johns Hopkins University School Medicine, Director of Interventional Pulmonary, Sibley Hospital, Johns Hopkins University School of Medicine, Washington, DC; OR 56, 60, 66, 79, 81, 82, 84, 87, 89, 93, 97, 102; RA 27, 30; ED 5, 6

- 2016-present Diana Yu, MD*, Interventional Pulmonology, Johns Hopkins University School of Medicine
Interventional Pulmonology, Director of Interventional Pulmonology, Stanford University, Palo Alto, CA; OR 70, 89, 92, 100; BC 2, 7
- 2016-present Christopher Mallow, MD, Pulmonary and Critical, Johns Hopkins University School of Medicine, Pulmonary and Critical Care, University of Miami School of Medicine, Miami, FL; OR 60, 63, 73, 75, 76, 82, 83, 85, 89, 93, 95, 97, 100; RA 25
- 2017-present Majid Shafiq, MD, Interventional Pulmonology, Johns Hopkins University School of Medicine
Interventional Pulmonology, Director of Interventional Pulmonology, Brigham and Women's Hosp, Harvard University School of Medicine, Boston, MA; OR 50, 87, 96, 100; RA 28, 31, CR 17
- 2017-present Jeffery Thiboutot, MD, Interventional Pulmonology, Johns Hopkins University School of Medicine
Interventional Pulmonology, Interventional Pulmonology, Johns Hopkins University School of Medicine, Baltimore, MD; OR 60, 73, 76, 83, 89, 93, 97, 100; RA 30; ED 12; *First IP fellow to receive an NIH F32. K08 pending*
- 2018-present Sharad Chandrika, Interventional Pulmonology, Johns Hopkins University School of Medicine
Interventional Pulmonology, Interventional Pulmonology, Cancer Treatment Centers of America, Phoenix, AZ; RA 33
- 2019-present Christopher Kapp, MD, Pulmonary and Critical, Johns Hopkins University School of Medicine, Interventional Pulmonology postdoctoral fellow, Johns Hopkins University School of Medicine, Baltimore, MD; BC 8, Director of Interventional Pulmonology, University of Illinois Chicago
- 2020-present Andrew Demaio, MD, Interventional Pulmonology postdoctoral fellow, Johns Hopkins University School of Medicine, Director of Interventional Pulmonary Research, New York University
- 2021-present Abishek Sarkar, MD Interventional Pulmonology postdoctoral fellow, Johns Hopkins University School of Medicine, Director of Interventional Pulmonary Research, New York Medical College
- 2021-present Cody Adkinson, MD, Interventional Pulmonology postdoctoral fellow, Johns Hopkins University School of Medicine, Director of Interventional Pulmonary Research, University of Miami
- 2022-present Krystle Pew, MD, Interventional Pulmonology postdoctoral fellow, Johns Hopkins University School of Medicine
- 2021-present Travis Ferguson MD, Interventional Pulmonology postdoctoral fellow, Johns Hopkins University School of Medicine

Thesis Committees

- 2011-2012 Vinciya Pandian, PhD, Quality of Life in Mechanically Ventilated Patients, Johns Hopkins University School of Nursing, Baltimore, MD
- 2013-2019 Thesis Committee Member, The Whitaker Biomedical Engineering Institute, Johns Hopkins University, Baltimore, MD

Educational Program Building/Leadership

- 2011-2015 Fellowship Program Director, Interventional Pulmonary, Division of Pulmonary and Critical Care, Johns Hopkins University School of Medicine, Baltimore, MD- Responsible for the training program as a whole including curriculum development, procedural and clinical competence and research mentorship. Created the first IP training program in the world to transition from a dedicated one-year fellowship program to a two-year program to ensure the academic success of our trainees and this Johns Hopkins Medicine tripartite mission. Our section is currently the most academically productive Interventional Pulmonology program in the country with 100% of graduates on faculty at academic centers.
- 2012-present Board of Directors, American Association for Bronchology and Interventional Pulmonology Exam Certification Committee. I am a founding member and exam writer of the American Association for Bronchology and Interventional Pulmonology's Board Certification Examination. This included working with a nationally recognized testing company to develop the outline for the examination, form a test writing committee, write the questions and administer the examination annually.
- 2019-present Co-Director, Economics of Clinical Operations Course, Office of Faculty Development, Johns Hopkins University School of Medicine, Baltimore, MD- To provide a basic, physician-oriented program with a goal of enhancing the understanding of business principles associated with healthcare financial and related regulatory environments.

RESEARCH ACTIVITIES

Research Focus

My research is focused on minimally invasive device design, prototyping, validation, safety and outcomes research to advance the minimally invasive diagnosis of lung cancer. I have concentrated my recent research and efforts to innovate and optimize tools to improve our diagnostic capabilities and have positioned my lab to work from bench to bedside. As part of this work, I invented a novel minimally invasive device at Johns Hopkins University to improve lung cancer diagnostics; utilized my business experience to partner with industry in the field to prototype and produce the device; ran several feasibility trials which resulted in FDA 510K approval in January 2020; and am the principal investigator of a randomized controlled multicenter trial to show efficacy and improvements over current methods.

Research Program Building/Leadership

- 2012-present Founder and Director, Airway Stenosis After Undergoing Lung Transplantation network. Director of a multi-centered research network investigating airway stenosis after lung transplant pathophysiology and therapeutics.
- 2013-present Founder and Director, Interventional Pulmonary Outcomes Group (IPOG); the first multicentered research consortium within the Interventional Pulmonary community to organize and facilitate clinical and translational research focused on multicentered prospective trials. The research consortium has grown to over 40 centers with 50 publications to date and millions of dollars in research funding.
- 2013-2018 Director, Hopkins Lung Tissue (HOLT) Biorepository; a divisional multidisciplinary collaborative research-working group to organize and facilitate translational research through human specimens.
- 2013-present Director, Johns Hopkins Interventional Pulmonary Research Core. In this capacity, I am responsible for directing the translational, clinical and basic research projects efforts, overseeing the research lab team and building significant extramural funding since the creation of the core. From 2015 forward, Johns Hopkins Interventional Pulmonary Research Core remains one of the largest and most academically productive/funded IP programs in the world.

Research Demonstration Activities

- 2015-present Association of Interventional Pulmonary Program Directors Research Mentorship Program, Curriculum based mentorship program to provide directed research mentorship to Interventional Pulmonary postdoctoral fellows in the US and Canadian.

Inventions, Patents, Copyrights

- 8/1/13 Inventor, Encapsulated Cryoprobe for flexible bronchoscopic sampling of lung parenchyma
Patent number 5038260b
- 1/6/20 FDA 510K Approval K190651, Encapsulated Cryoprobe
- 1/15/21 Inventor, Early stage lung cancer detection with volatile organic compound breath signatures
Patent number pending

Technology Transfer Activities

- 2018 Co-founder, Inspire Medical, LLC, a company that provides clinical research design, trial build, site selection, publication strategy and device expansion pathways to minimally invasive medical device corporations

SYSTEM INNOVATION AND QUALITY IMPROVEMENT ACTIVITIES

System Innovation Focus

Focus on improving lung nodule and lung cancer patient centered outcomes. I am the lead on projects generating a collaborative program to structure and improve the care of those patients both at JHMI and internationally. These programs include management of complex airways, tracheostomy, lung nodule management, pleural intervention management documentation and procedural safety.

System Innovation and Quality Improvement efforts within JHMI

- 2010-present Co-Director, Multidisciplinary complex airway team, initiated a multidisciplinary team and tumor board where active patients with complex airways are treated between the Interventional Pulmonology, Thoracic Surgery, Otorhinolaryngology Head & Neck Surgery and Anesthesiology services with a forum to discuss morbidity and mortality. The goal is continuous quality improvement for the care of these difficult patients.

2015-present	Chair, Indwelling Pleural Catheter Safety Committee, initiated quality assessment and improvement committee to develop improvement solutions to improve infection outcomes in patients with indwelling pleural catheters. Projects have resulted in evidence based institutional protocols which have improved patient outcomes.
2016-present	Co-Chair, Pleural Infection and Thrombolysis Safety Committee, Develop institutional guidelines for the safe and effective administration of lytic therapy for pleural infection.
2019-present	Service Specific Liaison for Pulmonary and Critical Care Clinical Documentation Excellence (CDE) Program, works closely with CDE specialists to actively support and improve the process of clinical documentation in the inpatient medical record.
2019-present	Core Faculty, Johns Hopkins US News and World Report Marketing Committee
2020-2023	Co-Director, COVID-19 Thoracic Oncology Triage Committee, Developed institutional guidelines and recommendations for thoracic oncology patient triage during the global pandemic.
2020-2023	Clinical Director, COVID-19 ICU Taskforce, Modeled, designed and staffed 100 additional multidisciplinary ICU beds at Johns Hopkins Hospital to facilitate health system wide care capacity during the global pandemic. Required a multidisciplinary effort with the departments of medicine, anesthesia, surgery and pediatrics.
2022	DSMB Member, BRITE Study: Safety of Research Bronchoscopies at Johns Hopkins University

System Innovation and Quality Improvement efforts outside JHMI

2013-present	Founder and Director, Interventional Pulmonary Outcomes Group (IPOG): the first multicenter research consortium within the IP community with a mission to improve patient safety and quality improvement.
2016-present	Co-Director, International Cryobiopsy Safety Consortium, developed multidisciplinary guidelines and clinical trial development tools to advance procedural education and optimize safety during cryobiopsy procedures.
2018-present	FDA Panel Member (elected), Anesthesiology and Respiratory Therapy Devices Panel of the Medical Devices Advisory Committee, Food and Drug Administration
2018	FDA Panel Member, convened for Bronchoscopic Coils for the Treatment for Emphysema, Anesthesiology and Respiratory Therapy Devices Panel of the Medical Devices Advisory Committee, Food and Drug Administration
2022	Chair, FDA Convened Panel for Transbronchoscopic Ablation of Oligometastatic Disease
2022	Appointed Member, ATS/CHEST Clinical Practice Committee
2022	DSMB Chair, Nanopac Multicentered Trial: Intratumoral NSCLC Injection
2022	DSMB Chair, Veritas Multicentered Randomized Controlled Trial: CT-TTNA vs EMN
2022	FDA Panel Member, convened for Racial Disparities in Pulse Oximetry Use, Anesthesiology and Respiratory Therapy Devices Panel of the Medical Devices Advisory Committee, Food and Drug Administration

System Innovation and Quality Improvement/Leadership

2010-present	Co-Director, I have led the effort to create a multidisciplinary complex airway team, initiated a multidisciplinary team and tumor board where active patients with complex airways are treated between the Interventional Pulmonology, Thoracic Surgery, Otorhinolaryngology Head & Neck Surgery and Anesthesiology services with a forum to discuss morbidity and mortality. The goal is continuous quality improvement for the care of these difficult patients.
2015-present	Chair, Indwelling Pleural Catheter Safety Committee, I have led the effort to create a quality assessment and improvement committee to develop improvement solutions to improve infection outcomes in patients with indwelling pleural catheters. Projects have resulted in evidence based institutional protocols which have improved patient outcomes.
2016-present	Co-Chair, Pleural Infection and Thrombolysis Safety Committee, I have led the effort to develop institutional guidelines for the safe and effective administration of lytic therapy for pleural infection.
2020-present	Co-Director, COVID-19 Thoracic Oncology Triage Committee, I led the effort to develop institutional and international guidelines and recommendations for thoracic oncology patient triage during the global pandemic.
2020-present	Clinical Director, COVID-19 ICU Taskforce, Modeled, designed and staffed 100 additional multidisciplinary ICU beds at Johns Hopkins Hospital to facilitate health system wide care capacity

during the global pandemic. Required a multidisciplinary effort with the departments of medicine, anesthesia, surgery and pediatrics.

ORGANIZATIONAL ACTIVITIES

Institutional Administrative Appointments

2010-present	Co-Director, Interventional Pulmonology, Johns Hopkins Hospital
2010-Present	Director, Interventional Pulmonology Fellowship Training Program
2010-present	Procedural Complication Committee
2011-present	Curriculum Development for Interventional Pulmonology Workshop
2013-present	Director, Interventional Pulmonology, Johns Hopkins Bayview Medical Center
2013-present	Director, Lung Nodule Clinic
2014-present	Clinical Director, Division of Pulmonary and Critical Care Medicine
2017-present	New Building Workgroup Committee, Johns Hopkins Bayview
2019-present	Service Specific Liaison for Pulmonary and Critical Care Clinical Documentation Excellence (CDE) Program, works closely with CDE specialists to actively support and improve the process of clinical documentation in the inpatient medical record
2022	Search Committee for the Associate Dean of Clinical Affairs, Johns Hopkins University

Editorial Activities

Editorial Board Appointments

2014-2017	Associate Editor, <i>Immunome Research</i>
2015-2016	Guest Editor, <i>Seminars in Respiratory and Critical Care Medicine: Interventional Pulmonology</i>
2017-2019	Associate Editor, <i>BMC Pulmonary Medicine</i>
2016-2023	Associate Editor, <i>Respirology</i>

Journal Peer Review Activities

2011-present	<i>Chest: American College of Chest Physicians</i>
2012-present	<i>Journal of the American Medical Association,</i>
2012-present	<i>American Journal of Respiratory and Critical Care Medicine</i>
2012-present	<i>New England Journal of Medicine</i>
2012-present	<i>Respiration</i>
2012-present	<i>Respirology</i>
2012-present	<i>Journal of Bronchology and Interventional Pulmonology</i>
2012-present	<i>Journal of Hospital Medicine</i>
2012-present	<i>Respiratory Care</i>
2012-present	<i>Case Reports in Medicine</i>
2012-present	<i>American Journal of Medicine</i>
2015-present	<i>Thorax</i>
2019-present	<i>Lancet Respiratory Medicine</i>
2019-present	<i>Journal of Clinical Investigation</i>

Advisory Committees, Review Groups/Study Sections

2010-2015	National Chair, National Residency Matching Program (NRMP) for Interventional Pulmonology Fellowship Programs
2011-2015	Executive Committee, American College of Chest Physicians (ACCP) Quality Improvement Registry (AQuIRE)
2011-2015	Chair, NSCLC AQuIRE Data Element Workgroup
2011-2015	Co-Chair, Thoracic Oncology Network E-Community committee
2011-present	Director, AIPPD Interventional Pulmonology Training and Curriculum Committee
2011-2014	Co-Director, AABIP Interventional Pulmonology Board Certification Exploration Committee
2012-present	Member, AABIP Interventional Pulmonology Board Certification Exam Writing Committee
2012-present	Member, ACCP Interventional Pulmonary Network Steering Committee
2013-present	Member, Scientific Presentation and Awards Committee, American College of Chest Physicians
2013-present	Member, Clinical Advisory Committee, American Thoracic Society
2014-present	Member, Resident Development Scholarship Planning Committee, American Thoracic Society

2014-present	Executive Director, Research Committee, World Association of Bronchology and Interventional Pulmonology
2015 -2017	Vice-Chair, ACCP Interventional Pulmonary Network Steering Committee
2017-2019	Chair, ACCP Interventional Pulmonary Network Steering Committee
2018	Global Scientific Committee, 20 th WCBIP/WCBE World Congress of Interventional Pulmonology
2018-present	Panel Member, Anesthesiology and Respiratory Therapy Devices Panel of the Medical Devices Advisory Committee, Food and Drug Administration
2018-2020	Chair, American College of Chest Physicians Cryobiopsy for ILD Guidelines
2019-present	Study Section, Canada Foundation for Innovation
2019	Advisory Board, Multidisciplinary Non-Small Cell Lung Cancer Diagnostics, NCCN
2019-present	Member, Program Committee, Thoracic Oncology Assembly, American Thoracic Society
2019-present	Member, Program Committee, Clinical Problems Assembly, American Thoracic Society
2020-present	Member, Nominating Committee, Thoracic Oncology Assembly, American Thoracic Society
2020	Member, Lung Cancer Research Program Study Section, Department of Defense
2021	Member, Lung Cancer Research Program Study Section, Department of Defense

Professional Societies

2006-present	American Thoracic Society
2019-present	Program Committee, Thoracic Oncology Assembly
2019-present	Program Committee, Clinical Problems Assembly
2020-present	Nominating Committee, Thoracic Oncology Assembly
2006-present	American College of Chest Physicians
2015 -2017	Vice-Chair, ACCP Interventional Pulmonary Network
2017-2019	Chair, ACCP Interventional Pulmonary Network
2006-present	American Association of Bronchoscopy and Interventional Pulmonology (AABIP)
2011-present	Director, AIPPD Interventional Pulmonology Training and Curriculum Committee
2011-2014	Co-Director, AABIP Interventional Pulmonology Board Certification Exploration Committee
2012-present	Member, AABIP Interventional Pulmonology Board Certification Exam Writing Committee
2006-2014	Society for Critical Care Medicine
2009-present	Founding Member, Association of Interventional Pulmonary Program Directors
2013-present	Founder, Interventional Pulmonary Outcomes Group
2014-present	Executive Director
2019-present	Study Section, Interventional Pulmonary Grants
2014-present	World Association of Bronchology and Interventional Pulmonology (WABIP)
2014-present	Executive Director, Research Committee, WABIP
2014-present	Fellow, American College of Chest Physicians
2018-present	Fellow, American Thoracic Society
2022-present	Elected Member, The Fleischer Society, an international, multidisciplinary medical society for thoracic radiology, dedicated to the diagnosis and treatment of diseases of the chest.

Conference Organizer

JHMI/Regional

2010	Conference Organizer, The Management of Pleural Disease: 100 th Anniversary of Thoracoscopy, Johns Hopkins University School of Medicine, Baltimore, MD
2011	Conference Organizer, 2 nd Annual Management of Pleural Disease, Johns Hopkins University School of Medicine, Baltimore, MD
2012	Conference Organizer, EBUS and Advanced Diagnostic Bronchoscopy, Johns Hopkins University School of Medicine, Cambridge, MD
2012	Conference Organizer, 3 rd Annual Diagnosis and Management of Pleural Disease, Johns Hopkins University School of Medicine, Baltimore, MD
2013	Conference Organizer, 2 nd Annual EBUS and Advanced Diagnostic Bronchoscopy. Johns Hopkins University School of Medicine, Cambridge, MD
2013	Conference Organizer, 13 th Annual Update and Board Review Pearls in Pulmonary and Critical Care Medicine, Johns Hopkins University School of Medicine, Cambridge, MD

2013 Conference Organizer, Percutaneous Tracheostomy, Johns Hopkins University School of Medicine, Baltimore, MD

2014 Conference Organizer, 4th Annual Diagnosis and Management of Pleural Disease, Pulmonary CME Course, Johns Hopkins University School of Medicine, Baltimore, MD

2014 Conference Organizer, 3rd Annual EBUS and Advanced Diagnostic Bronchoscopy. Johns Hopkins University School of Medicine, Cambridge, MD

2015 Conference Organizer, 5th Annual Diagnosis and Management of Pleural Disease, Johns Hopkins University School of Medicine, Baltimore, MD

2015 Conference Organizer, 4th Annual EBUS and Advanced Diagnostic Bronchoscopy. Johns Hopkins University School of Medicine, Cambridge, MD

2016 Conference Organizer, 6th Annual Diagnosis and Management of Pleural Disease, Johns Hopkins University School of Medicine, Baltimore, MD

2016 Conference Organizer, Percutaneous Tracheostomy, Johns Hopkins University School of Medicine, Baltimore, MD

2016 Conference Organizer, 5th Annual EBUS and Advanced Diagnostic Bronchoscopy. Johns Hopkins University School of Medicine, Cambridge, MD

2017 Conference Organizer, Percutaneous Tracheostomy, Johns Hopkins University School of Medicine, Baltimore, MD

2017 Conference Organizer, 7th Annual Diagnosis and Management of Pleural Disease, Johns Hopkins University School of Medicine, Baltimore, MD

2017 Conference Organizer, 6th Annual EBUS and Advanced Diagnostic Bronchoscopy. Johns Hopkins University School of Medicine, Cambridge, MD

2018 Conference Organizer, Percutaneous Tracheostomy, Johns Hopkins University School of Medicine, Baltimore, MD

2018 Conference Organizer, 8th Annual Diagnosis and Management of Pleural Disease, Johns Hopkins University School of Medicine, Baltimore, MD

2018 Conference Organizer, 7th Annual EBUS and Advanced Diagnostic Bronchoscopy. Johns Hopkins University School of Medicine, Cambridge, MD

2019 Conference Organizer, Percutaneous Tracheostomy, Johns Hopkins University School of Medicine, Baltimore, MD

2019 Conference Organizer, 9th Annual Diagnosis and Management of Pleural Disease, Johns Hopkins University School of Medicine, Baltimore, MD

2019 Conference Organizer, 8th Annual EBUS and Advanced Diagnostic Bronchoscopy. Johns Hopkins University School of Medicine, Cambridge, MD

2020 Conference Organizer, Percutaneous Tracheostomy, Johns Hopkins University School of Medicine, Baltimore, MD

2020 Conference Organizer, 10th Annual Diagnosis and Management of Pleural Disease, Johns Hopkins University School of Medicine, Baltimore, MD

2020 Conference Organizer, A COVID-19 Pandemic Update for Hospitals and Clinicians: A Virtual and Interactive Learning Experience, Johns Hopkins University School of Medicine, Baltimore, MD
Organized and directed the first global COVID-19 education effort during the pandemic in collaboration with Johns Hopkins International with proceeds directed towards institutional COVID-19 research and international humanitarian relief efforts

National

2014 Conference Organizer, Lung Cancer Updates and Pearls. Johns Hopkins University School of Medicine, Chapel Hill, NC

2014 Conference Organizer, 14th Annual Update and Board Review Pearls in Pulmonary and Critical Care Medicine, Johns Hopkins University School of Medicine, Sulphur Springs, WV

2015 Conference Organizer, 15th Update and Board Review Pearls in Pulmonary and Critical Care Medicine, Johns Hopkins University School of Medicine, Isle of Palms, SC

2016 Conference Organizer, 2nd Annual Lung Cancer Updates and Pearls. Johns Hopkins University School of Medicine, Chapel Hill, NC

2016 Conference Organizer, 16th Update and Board Review Pearls in Pulmonary and Critical Care Medicine, Johns Hopkins University School of Medicine, Santa Fe, NM

- 2017 Conference Organizer, 3rd Annual Lung Cancer Updates and Pearls. Johns Hopkins University School of Medicine, Chapel Hill, NC
- 2017 Conference Organizer, 17th Update and Board Review Pearls in Pulmonary and Critical Care Medicine, Johns Hopkins University School of Medicine, Napa Valley, CA
- 2018 Conference Organizer, 4th Annual Lung Cancer Updates and Pearls. Johns Hopkins University School of Medicine, Chapel Hill, NC
- 2019 Conference Organizer, 5th Annual Lung Cancer Updates and Pearls. Johns Hopkins University School of Medicine, Chapel Hill, NC

**Session Chair
JHMI/Regional**

- 2010 Session Chair, The Management of Pleural Disease: 100th Anniversary of Thoracoscopy, Johns Hopkins University School of Medicine, Baltimore, MD
- 2011 Session Chair, 2nd Annual Management of Pleural Disease, Johns Hopkins University School of Medicine, Baltimore, MD
- 2012 Session Chair, EBUS and Advanced Diagnostic Bronchoscopy, Johns Hopkins University School of Medicine, Cambridge, MD
- 2012 Session Chair, 3rd Annual Diagnosis and Management of Pleural Disease, Johns Hopkins University School of Medicine, Baltimore, MD
- 2013 Session Chair, 2nd Annual EBUS and Advanced Diagnostic Bronchoscopy. Johns Hopkins University School of Medicine, Cambridge, MD
- 2013 Session Chair, 13th Annual Update and Board Review Pearls in Pulmonary and Critical Care Medicine, Johns Hopkins University School of Medicine, Cambridge, MD
- 2013 Session Chair, Percutaneous Tracheostomy, Johns Hopkins University School of Medicine, Baltimore, MD
- 2014 Session Chair, 4th Annual Diagnosis and Management of Pleural Disease, Pulmonary CME Course, Johns Hopkins University School of Medicine, Baltimore, MD
- 2014 Session Chair, 3rd Annual EBUS and Advanced Diagnostic Bronchoscopy. Johns Hopkins University School of Medicine, Cambridge, MD
- 2015 Session Chair, 5th Annual Diagnosis and Management of Pleural Disease, Johns Hopkins University School of Medicine, Baltimore, MD
- 2015 Session Chair, 4th Annual EBUS and Advanced Diagnostic Bronchoscopy. Johns Hopkins University School of Medicine, Cambridge, MD
- 2016 Session Chair, 6th Annual Diagnosis and Management of Pleural Disease, Johns Hopkins University School of Medicine, Baltimore, MD
- 2016 Session Chair, Percutaneous Tracheostomy, Johns Hopkins University School of Medicine, Baltimore, MD
- 2016 Session Chair, 5th Annual EBUS and Advanced Diagnostic Bronchoscopy. Johns Hopkins University School of Medicine, Cambridge, MD
- 2016 Session Chair, 3rd International Tracheostomy Symposium, Baltimore, MD
- 2017 Session Chair, Percutaneous Tracheostomy, Johns Hopkins University School of Medicine, Baltimore, MD
- 2017 Session Chair, 7th Annual Diagnosis and Management of Pleural Disease, Johns Hopkins University School of Medicine, Baltimore, MD
- 2017 Session Chair, 6th Annual EBUS and Advanced Diagnostic Bronchoscopy. Johns Hopkins University School of Medicine, Cambridge, MD
- 2018 Session Chair, Percutaneous Tracheostomy, Johns Hopkins University School of Medicine, Baltimore, MD
- 2018 Session Chair, 8th Annual Diagnosis and Management of Pleural Disease, Johns Hopkins University School of Medicine, Baltimore, MD
- 2018 Session Chair, Invasive Pulmonary Fungal Disease, American College of Chest Physicians, Baltimore, MD
- 2018 Session Chair, 7th Annual EBUS and Advanced Diagnostic Bronchoscopy. Johns Hopkins University School of Medicine, Cambridge, MD

2019 Session Chair, Percutaneous Tracheostomy, Johns Hopkins University School of Medicine, Baltimore, MD

2019 Session Chair, 9th Annual Diagnosis and Management of Pleural Disease, Johns Hopkins University School of Medicine, Baltimore, MD

2019 Session Chair, 8th Annual EBUS and Advanced Diagnostic Bronchoscopy. Johns Hopkins University School of Medicine, Cambridge, MD

2020 Session Chair, Percutaneous Tracheostomy, Johns Hopkins University School of Medicine, Baltimore, MD

2020 Session Chair, 10th Annual Diagnosis and Management of Pleural Disease, Johns Hopkins University School of Medicine, Baltimore, MD

National

2013 Session Chair, Lung Transplant Airway Stenosis, American Thoracic Society, Philadelphia, PA

2014 Session Chair, Lung Cancer Updates and Pearls. Johns Hopkins University School of Medicine, Chapel Hill, NC

2014 Session Chair, 14th Annual Update and Board Review Pearls in Pulmonary and Critical Care Medicine, Johns Hopkins University School of Medicine, Sulphur Springs, WV

2014 Session Chair, A Multi-Disciplinary Approach to Lung Cancer, American Society of Clinical Pathology, Tampa, Florida.

2014 Session Chair, Pleural Updates, American Thoracic Society, San Diego, CA

2015 Session Chair, Thoracic Navigational Bronchoscopy Conference, St Louis, MO

2015 Session Chair, 15th Update and Board Review Pearls in Pulmonary and Critical Care Medicine, Johns Hopkins University School of Medicine, Isle of Palms, SC

2015 Session Chair, Lung Cancer Staging: Improving your yield, American Thoracic Society, Dallas TX

2015 Session Chair, Translational Aspects of Interventional Pulmonology, American College of Chest Physicians, San Diego, CA

2015 Session Chair, Building a Research Program, Association for Bronchology Interventional Pulmonary Fellow's Boot Camp, Orlando, FL

2015 Session Chair, Master Pleural Disease Expert Panel, American College of Chest Physicians, San Diego, CA

2015 Session Chair, Multidisciplinary Aspects of Lung Cancer Diagnostics, American College of Chest Physicians, San Diego, CA

2016 Session Chair, Building a Research Program, Association for Bronchology Interventional Pulmonary Fellow's Boot Camp, Orlando, FL

2016 Session Chair, 2nd Annual Lung Cancer Updates and Pearls. Johns Hopkins University School of Medicine, Chapel Hill, NC

2016 Session Chair, 16th Update and Board Review Pearls in Pulmonary and Critical Care Medicine, Johns Hopkins University School of Medicine, Santa Fe, NM

2016 Session Chair, Thoracic Navigational Bronchoscopy Conference, Las Vegas, NV

2017 Session Chair, Building a Research Program, Association for Bronchology Interventional Pulmonary Fellow's Boot Camp, Orlando, FL

2017 Session Chair, Lung Cancer Procedures, American Cancer Society, Las Vegas, Nevada.

2017 Session Chair, 18th World congress for Bronchology and Interventional Pulmonology, Rochester MN

2017 Session Chair, 3rd Annual Lung Cancer Updates and Pearls. Johns Hopkins University School of Medicine, Chapel Hill, NC

2017 Session Chair, 17th Update and Board Review Pearls in Pulmonary and Critical Care Medicine, Johns Hopkins University School of Medicine, Napa Valley, CA

2018 Session Chair, 4th Annual Lung Cancer Updates and Pearls. Johns Hopkins University School of Medicine, Chapel Hill, NC

2018 Session Chair, Cryobiopsy Guidelines, American College of Chest Physicians, San Diego, CA

2018 Session Chair, Building a Research Program, Association for Bronchology Interventional Pulmonary Fellow's Boot Camp, Orlando, FL

2018 Session Chair, Interventional Pulmonary, Pittsburgh International Lung Conference, Pittsburgh, PA

2019 Session Chair, Thoracic Navigational Bronchoscopy Conference, Las Vegas, NV

2019 Session Chair, Innovation in IP, National Innovation Summit, Dallas, TX

- 2019 Session Chair, Updates in Cryobiopsy, American College of Chest Physicians, San Antonio, TX
- 2019 Session Chair, Building a Research Program, Association for Bronchology Interventional Pulmonary Fellow's Boot Camp, Orlando, FL
- 2019 Session Chair, 5th Annual Lung Cancer Updates and Pearls. Johns Hopkins University School of Medicine, Chapel Hill, NC

International

- 2012 Session Chair, Interventional in the USA, Asian Pacific Society of Respiriology, Shanghai, China
- 2013 Session Chair, Airway Stenosis, International Society for Heart and Lung Transplantation Annual Meeting, Montreal, Canada.
- 2014 Session Chair, EBUS, World Congress in Interventional Pulmonology, Kyoto, Japan.
- 2014 Session Chair, Interventional Pulmonary, Chinese Respiratory Society, Shanghai, China.
- 2016 Session Chair, Research and Bronchoscopy, 19th World Congress of Bronchology and Interventional Pulmonology, Florence, Italy
- 2020 Session Chair, Cryobiopsy, 21st World Congress of Bronchology and Interventional Pulmonology, Shanghai, China
- 2020 Session Chair, EBUS or Conventional TBNA? 21st World Congress of Bronchology and Interventional Pulmonology, Shanghai, China
- 2022 Session Chair, Advancing Research in Interventional Pulmonology, Florence, Italy

Consultantships

- 2012-present Olympus America
- 2015-present Boston Scientific
- 2018-present Astra Zeneca
- 2018-present Intuitive Surgical

RECOGNITION

Awards and Honors:

- 2009 American Thoracic Society Critical Care training program travel scholarship
- 2009 Fellow, American College of Chest Physicians
- 2010 Young Clinical Investigators Award, American Association of Bronchology and Interventional Pulmonology
- 2011 Best Poster, American College of Chest Physicians Winner
- 2012 American College of Chest Physicians Johns Hopkins Interventional Pulmonology Program elected as *First IP Center of Excellence*, Atlanta, Georgia
- 2013 American Association of Bronchology and Interventional Pulmonology Awarded the first AABIP Research award
- 2017 Distinguished CHEST Educator Award, American College of Chest Physicians (inaugural class)
- 2018 Fellow, American Thoracic Society (inaugural class)
- 2018 Lung Cancer Screening Center of Excellence, Lung Cancer Alliance
- 2018 Distinguished CHEST Educator Award, American College of Chest Physicians
- 2019 Distinguished CHEST Educator Award, American College of Chest Physicians
- 2020 Distinguished CHEST Educator Award, American College of Chest Physicians
- 2020 Pasquale Ciaglia Memorial Lecture in Interventional Medicine, American College Chest Physicians
- 2021 Distinguished CHEST Educator Award, American College of Chest Physicians
- 2022 Distinguished CHEST Educator Award, American College of Chest Physicians

Invited Talks, Panels

JHMI/Regional

- 2009 Speaker, "Percutaneous Tracheostomy," Introduction to Tracheostomy, Department of Otolaryngology, Johns Hopkins University, Baltimore, MD
- 2009 Speaker, "Introduction to Interventional Pulmonology," Weinberg Oncology Unit, Johns Hopkins Hospital, Baltimore, MD
- 2009 Speaker, "Introduction to Interventional Pulmonology," Weinberg Oncology Unit, Johns Hopkins Hospital, Baltimore, MD

2009 Speaker, "Introduction to Thoracentesis and Thoracic Ultrasound," Johns Hopkins Procedure Workshop, Baltimore, MD

2009 Speaker, "TBNA: Improving the Yield," Introduction to Bronchoscopy Course, Johns Hopkins, Baltimore, MD

2009 Speaker, "Mitomycin and other adjuncts for airway stenosis," Multidisciplinary Airway Conference, Johns Hopkins, Baltimore, MD

2010 Speaker, "Central Airway Obstruction," Pulmonary Grand Rounds, Johns Hopkins University, Baltimore, MD

2010 Speaker, "Bronchoscopy: Myths, Legends and Artifacts," Pulmonary Grand Rounds, Johns Hopkins, Baltimore, MD

2010 Speaker, "Interventional Pulmonology in 2010," Medical Grand Rounds, Suburban Hospital, Bethesda, Maryland

2011 Speaker, "Interventional Pulmonology for the Cardiothoracic Surgeon," Cardiothoracic Surgery Grand Rounds, Johns Hopkins Hospital, Baltimore, MD

2011 Speaker, "Basic Bronchoscopy," Introduction to Bronchoscopy Course, Johns Hopkins Hospital, Baltimore, MD

2011 Speaker, "Thoracic ultrasound," Critical Care Ultrasonography, Johns Hopkins Hospital, Baltimore

2012 Speaker, "The Death of Pleural Nihilism," Medical Grand Rounds, Johns Hopkins Hospital, Baltimore, MD

National

2006 Speaker, "Instituting the FACTT Algorithm in your ICU," Pulmonary Grand Rounds, Maine Medical Center, Portland, ME

2007 Speaker, "Cardiac Sarcoidosis," Northern New England Fellows Conference, University of Vermont, Burlington, VT

2007 Speaker, "Cryptococcal Pneumonia in the Immunocompetent Host," Northern New England Fellows Conference, University of Vermont College of Medicine, Burlington, VT

2007 Speaker, "Endobronchial Ultrasound," Pulmonary Grand Rounds, Maine Med Center, Portland ME

2008 Speaker, "Pleural Manometry: Technique and Applications," Pulmonary Grand Rounds, Maine Medical Center, Portland, ME

2011 Speaker, "Interventional Pulmonology Update," Medical Grand Rounds, Prince Georges Hospital, Annapolis, Maryland

2011 Speaker, "Pleural Palliation," American Thoracic Society International Conference, San Diego, CA

2011 Speaker, "EBUS Molecular Analysis," American Thoracic Soc International Conf, San Diego, CA

2011 Speaker, "The Utility of Medical Thoracoscopy in a Patient with a Difficult Airway," CHEST 2011: American College of Chest Physicians, Honolulu, HI **winner, best case report, pleural disease*

2012 Speaker, "Tissue is the Issue Acquisition and Specimen Processing," American Thoracic Society International Conference, San Francisco, CA

2012 Speaker, "Lung Transplant and Bronchoscopy," American College of Chest Physicians Fundamentals of Bronchoscopy, Chicago, IL

2012 Speaker, "Bronchoscopy in the ICU," American Association of Bronchology and Interventional Pulmonology annual meeting, Cleveland, OH

2013 Speaker, "Bronchoscopic Lung Volume Reduction," American Thoracic Society International Meeting, Philadelphia, PA

2014 Speaker, "Radial EBUS," Society of Thoracic Surgeons annual meeting, Orlando, FL

2014 Speaker, EBUS specimen acquisition, Duke University, Durham, NC

2014 Speaker, "Specimen Acquisition and Processing," American Thoracic Society International Conference, San Diego

2014 Speaker, "BLVR," American College of Chest Physicians International Conference, Austin, TX

2015 Speaker, "Getting to the Periphery of the Lung," Washington University of Saint Louis, St Louis, MO

2015 Speaker, "Improving your EBUS Yield," Duke University, Durham, NC

2015 Speaker, "EBUS Outcomes," American Thoracic Society International Conference, Denver, CO

2016 Speaker, How Not to Die Short of Breath: Treatment of Malignant Pleural Effusions, American Thoracic Society International Conference, San Francisco, CA

2016 Speaker, Pleural Disease Master Class: Interactive Case-Based Studies, American College of Chest Physicians, Los Angeles, CA

2017 Speaker, "Where to biopsy the lung," American Thoracic Society International Conference, Washington, DC

2017 Speaker, "Advancements in Electromagnetic Guidance for the Diagnosis of Pulmonary Nodules," Brigham and Women's Hospital, Harvard University School of Medicine, Boston, MA

2018 Speaker, "The Future of Bronchoscopy and Lung Cancer," Tufts University Maine Medical Center, Portland ME

2018 Speaker, "Gaining Access to the Periphery of the Lung: Multi-Modality Approach," World Congress of Bronchology and Interventional Pulmonology, Rochester, MN, USA

2018 Speaker, "Research Advancements in IP": The Last Ten Years, American Association for Bronchology and Interventional Pulmonology Inaugural Conference, Denver, CO

2018 Speaker, "Updates in Navigation," American College of Chest Physicians International Conference, San Antonio, TX

2019 Speaker, "Robotic Bronchoscopy," American Thoracic Society International Conference, Dallas, TX

2019 Speaker, "PRECISION-1 Trial and Robotics," American College of Chest Physicians International Conference, New Orleans, LA

2019 Speaker, "EMN and Radial EBUS," American College of Chest Physicians International Conference, New Orleans, LA

2019 Speaker, "Pleural Masterclass," American College of Chest Physicians International Conference, New Orleans, LA

2019 Speaker, "Endobronchial Ultrasound," University of Pittsburgh International Lung Conference, Pittsburgh, PA

2019 Speaker, "Current Lung Cancer Molecular Tissue Acquisition Standards," ACCP Lung Cancer Summit, Chicago, IL

2019 Speaker, "Lung Nodule Study Design," Cleveland Clinic Advancing Early Stage Lung Cancer Detection Conference, Cleveland, OH

2019 Speaker, "Research Mentorship and Leadership Skills," AIPPD Fellows Career Symposium, Orlando, FL

2022 Speaker, Advancing Research in Lung Cancer, Cleveland Clinic Lung Cancer Symposium, Cleveland, OH

2022 Speaker, "Bronchoscopy and TTNA- Where are we with Outcome Data?" American College of Chest Physicians International Conference, Nashville, TN

2022 Visiting Professor and Speaker, The Pleural Research Network in the US, The First Annual Richard W. Light Memorial Symposium, Vanderbilt University, Nashville, TN

International

2010 Speaker, "IP Training Evolution," CHEST 2010: American College of Chest Physicians, Vancouver, BC, Canada

2011 Speaker, "Airway Complication after Lung Transplant," European Respiratory Society, Amsterdam, The Netherlands

2012 Speaker, "Cryobiopsy for Lung Transplant Surveillance," International Society of Heart and Lung Transplantation, Prague, Czech Republic

2012 Speaker, "Pediatric Interventional Pulmonology," 5th Conference of the Pediatric Bronchoscope Medicine Alliance and Pediatric Bronchoscopy Forum, Jinan, China

2012 Speaker, "EBUS-TBNA" 4th International Bronchoscopy Summit, Guangdong, China

2013 Speaker, "Palliative Interventional Therapies," 4th International Symposium on Brain Death, Havana, Cuba

2014 Speaker, "EBUS," Panhellenic Congress on Respiratory and Occupational Chest Diseases, Thessaloniki University Hospital, Thessaloniki, Greece

2014 Speaker, "A Novel Hybrid EBUS System," World Congress of Interventional Pulmonology, Kyoto, Japan.

2015 Speaker, "Electromagnetic Guided Transthoracic Needle Aspiration," European Interventional Pulmonology Society, Barcelona, Spain

2015	Speaker, “Electromagnetic Guided Transthoracic Needle Aspiration,” Taiwan Society of Pulmonary and Critical Care, Taipei, Taiwan
2015	Speaker, “Advances in Navigational Bronchoscopy,” Congress of the Asian Pacific Society of Respiriology, Kuala Lumpur, Malaysia
2016	Speaker, “Electromagnetic Guidance TTNA,” Asian Society for Cardiovascular and Thoracic Surgery, Taipei, Taiwan
2016	Speaker, “Novel Innovations in Bronchoscopy,” World Congress for the Association for Bronchology and Interventional Pulmonology, Florence, Italy
2017	Speaker, “Interventional Pulmonology,” Shanghai Respiratory Society, Shanghai, China
2017	Speaker, “Navigational Bronchoscopy in Lung Cancer,” Azienda Ospedaliera University, Ancona, Italy
2017	Speaker, “Cryobiopsy,” Association of Italian Pulmonologists, Ravenna, Italy
2018	Speaker, Transthoracic Navigation Guidance, Korean Society of Thoracic Surgery Annual Meeting, Jeju, Korea.
2018	Speaker, “Cryobiopsy for Interstitial Lung Disease,” European Respiratory Society Congress, Paris, France
2018	Speaker, “Innovation and Outcome Improvements in Lung Biopsy,” Asian Pacific Society of Respiriology, Taipei, Taiwan
2018	Speaker, “Cryobiopsy for ILD,” Association of Italian Pulmonologists, Ravenna, Italy
2018	Speaker, “Lung Cancer Staging and the Impact of EBUS,” The First Affiliated Hospital, Soochow University, Shanghai, China
2018	Speaker, Cryobiopsy for ILD,” Association of Italian Pulmonologists, Florence, Italy
2018	Speaker, “Research and Bronchoscopy” Chinese Medical Association Respiratory Branch, Wenzhou, China
2019	Speaker, “Development of a Novel Cryobiopsy Device” University of Tubingen, Tubingen, Germany
2019	Speaker, “Advancements in Robotic Bronchoscopy” World Association for Bronchology and Interventional Pulmonology, Madrid, Spain
2019	Speaker, “Clinical Trial Design and Cryobiopsy” University of Stuttgart, Stuttgart, Germany
2020	Speaker, “Lung Cancer Diagnosis: New Horizons” 36 th Congress of Pneumology of the Portuguese Respiratory Society, Albufeira, Algarve, Portugal
2021	Speaker, “Incorporating Staging and Diagnosis as a Single Paradigm” American Thoracic Society Annual Meeting, Virtual Meeting due to COVID-19 Pandemic
2022	Speaker, “Robotics and the All in One Paradigm,” Association of Italian Pulmonologists, Florence, Italy
2022	Speaker, “Percutaneous Tracheostomy” UAE Thoracic Society, Clemenceau Hospital, Dubai, UAE
2023	Speaker. “Robotic Bronchoscopy: Early Experience and Pitfalls”, Tongji University East Hospital, Shanghai, China
2023	Speak. “Cryobiopsy for Peripheral Lesions”, EABIP, Paris, France

Visiting Professorships

2011	Soochow University, Suzhou, China
2012	Second Military Medical University, Changzheng Hospital, Shanghai, China
2012	Shunde University, First People's Hospital of Shunde, Guangdong, China
2012	The Second Hospital of Shandong University, Jinan, China
2013	Xiamen China Second Military Medical University, Shanghai, China
2013	Medical University of South Carolina, Charleston, SC.
2013	Wenzhou Medical University, Wenzhou, China
2014	Jinan Pediatric Hospital, Jinan, China
2014	Mt Sinai Hospital, NY, NY
2016	Shanghai Tenth Peoples Hospital of Tonghii University, Shanghai, China
2017	Mahidol University, Siriraj Hospital, Bangkok, Thailand
2017	National Taiwan University Hospital, Taipei, Taiwan
2018	Stonybrook University School of Medicine, Stonybrook, NY
2018	The First Affiliated Hospital, Soochow University, Shanghai, China
2021	Azienda Ospedaliero Universitaria, Ancona, Italy

