

CURRICULUM VITAE FOR ACADEMIC PROMOTION
The Johns Hopkins University School of Medicine

Michael B. Streiff, MD FACP

Date

DEMOGRAPHIC INFORMATION

Current Appointments

University:

2018- Professor, Department of Medicine and Pathology, Johns Hopkins
2008-2017 Associate Professor, Department of Medicine, Johns Hopkins
2012-present Associate Professor, Department of Pathology, Johns Hopkins
2012-present Associate Faculty, Armstrong Institute for Patient Safety and Quality

Hospital:

1997-present Attending Physician, The Johns Hopkins Hospital
2000-present Medical Director, The Johns Hopkins Hospital Special Coagulation Laboratory
2000-present Attending Physician, The Johns Hopkins Hospital Comprehensive Hemophilia Treatment Center

Other:

2009-present Chairman, Venous Thromboembolism Guidelines Committee, National Comprehensive Cancer Network
2013-present Board Member, Anticoagulation Forum
2014-present President, Medical and Scientific Advisory Board, National Blood Clot Alliance

Personal Data:

Hematology Medicine

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Education and Training (in chronological order)

Undergraduate

1983 B.S., Biology, Washington and Lee University, Lexington VA

Graduate/Doctoral

1984 Fulbright Scholar, Biochemistry, University of Ulm, Germany
1988 M.D., Medicine, Johns Hopkins University, Baltimore, MD

Postdoctoral

1988-1989 Intern, Medicine, University of Florida, Gainesville, FL
1989-1991 Resident, Medicine, University of Florida, Gainesville, FL
1991-1997 Fellow, Hematology/Oncology, Johns Hopkins University, Baltimore, MD

Professional Experience

1997-2000	Instructor, Medicine, Johns Hopkins University School of Medicine, Baltimore, MD
2000-2008	Assistant Professor, Medicine, Johns Hopkins University School of Medicine, Baltimore, MD
2003-present	Medical Director, The Johns Hopkins Anticoagulation Management Service and Outpatient Clinics
2008-present	Associate Professor, Medicine, Johns Hopkins University School of Medicine, Baltimore, MD

PUBLICATIONS:

Original Research [OR]

1. Loveys DA, ***Streiff MB**, Kato GJ. Id-3 is a General negative regulator of basic-helix-loop-helix transcriptional activators. *Nucleic Acids Res* 1996; 24(14):2813-2820. *provided experimental data [OR]
2. Loveys, DA, ***Streiff MB**, Schaefer, TS, Kato, GJ. The mUBC9 murine conjugating enzyme interacts with the E2A transcription factors. *Gene* 1997; 201(1-2):169-177. *provided experimental data [OR]
3. **Streiff MB**, Dundes L, Spivak JL. A mail survey of United States hematologists and oncologists: A comparison of business reply versus stamped return envelopes. *J Clin Epidemiol*. 2001; 54(4):430-432. [OR]
4. Arai S, Allan C, ***Streiff MB**, Hutchins GM, Vogelsang GB, Tsai H-M. Von Willebrand factor-cleaving protease activity and proteolysis of von Willebrand factor in bone marrow transplant-associated thrombotic microangiopathy. *Hematol J*. 2001;2(5):292-299.*study design, manuscript writing [OR]
5. **Streiff MB**, Ness PM. Acquired factor V inhibitors: a needless iatrogenic complication of bovine thrombin exposure. *Transfusion*. 2002; 42(1):18-26. [OR]
6. **Streiff MB**, Spivak JL. The diagnosis and management of polycythemia vera in the post-polycythemia vera study group era: A survey of American Society of Hematology (ASH) members' practice patterns. *Blood*. 2002; 99(4):1144-1149. [OR]
7. Ogawa R, ***Streiff MB**, Bugayenko A, Kato GJ. Inhibition of PDE4 phosphodiesterase activity induces growth suppression, apoptosis, glucocorticoid sensitivity, p53 and p21^{WAF1/CIP1} proteins in human acute lymphoblastic leukemia cells. *Blood*. 2002; 99(9):3390-97. *provided experimental data [OR]
8. **Streiff MB**, Mehta S, Thomas DL. Peripheral blood count abnormalities among persons with hepatitis C in the United States. *Hepatology*. 2002; 35(4):947-952. [OR]
9. Segal JB, Eng J, Jenckes MW, Tamariz LJ, Bolger DT, Krishnan JA, ***Streiff MB**, Harris KA, Feuerstein CJ, Bass EB. Diagnosis and treatment of deep venous thrombosis and pulmonary embolism. *Evid Rep Technol Assess (Summ)*. 2003;(68):1-6.*Data collection/analysis, manuscript writing [OR]
10. Segal JB, Bolger DT, Jenckes MW, Krishnan JA, ***Streiff MB**, Eng J, Tamariz LJ, Bass EB. Outpatient therapy with low molecular weight heparin for treatment of venous thromboembolism: a systematic review of efficacy, safety and costs. *Am J Med*. 2003; 115(4):298-308. * Data collection/analysis, manuscript editing [OR]
11. Thomas PA, Diener-West M, Canto MI, Martin DR, Post WS, **Streiff MB**. Academic promotion and career path: Results of a faculty survey at the Johns Hopkins University School of Medicine. *Acad Med*. 2004;79(3):258-264. [OR]
12. **Streiff MB**, Segal J, Grossman SA, Kickler TS, Weir EG. ABO blood group is a potent risk factor for venous thromboembolism in patients with malignant gliomas. *Cancer*. 2004; 100(8):1717-1723. [OR]
13. Krishnan JA, Segal JB, ***Streiff MB**, Bolger DT, Eng J, Jenckes MW, Tamariz LJ, Bass EB. Treatment of venous thromboembolism with low molecular weight heparin: A synthesis of the evidence published in systematic literature reviews. *Respir Med*. 2004; 98(5):376-386. * Data collection/analysis, manuscript editing [OR]
14. Tamariz LJ, Eng J, Segal JB, Krishnan JA, Bolger DT, ***Streiff MB**, Jenckes MW, Bass EB. Usefulness of clinical prediction rules for the diagnosis of venous thromboembolism: a systematic review. *Am J Med*. 2004; 117(9):767-784. * Data collection/analysis, manuscript editing [OR]
15. Eng J, Krishnan JA, Segal JB, Bolger DT, Tamariz LJ, ***Streiff MB**, Jenckes MW, Bass EB. Accuracy of computed tomography in the diagnosis of pulmonary embolism: a systematic literature review. *Am J Roentgen*. 2004; 183(6): 1819-1827. * Data collection/analysis, manuscript editing [OR]
16. de Alarcon P, Benjamin R, Dugdale M, Kessler C, Shopnick R, Smith P, Abshire T, Hambleton J, Matthew P, Ortiz I, Cohen A, Konkle B, ***Streiff MB**, Lee M, Corash L and Wages D. Fresh frozen plasma prepared with photochemical pathogen inactivation (PCT-FFP): Transfusion of patients with congenital coagulation factor deficiencies. *Transfusion*. 2005; 45(8):1362-1372. * Data collection, manuscript editing [OR]

17. Kim HS, Patra A, Khan J, Arepally A, **Streiff MB**. Transhepatic catheter-directed thrombectomy and thrombolysis of acute superior mesenteric venous thrombosis. *J Vasc Intervent Radiol*. 2005; 16(12):685-691. [OR]
18. Mintz PD, Bass NM, Steadman R, Petz LD, ***Streiff MB**, McCullough JJ, Burks S, Valentine ME, Corash L, Wages D. S-59 photochemically treated fresh frozen plasma for treatment of patients with the acquired coagulopathy of liver disease. *Blood*. 2006; 107(9):3753-3760. * Data collection/analysis, manuscript editing [OR]
19. **Streiff MB**, Segal JB, Tamariz LJ, Jenckes MW, Bolger DT, Eng J, Krishnan JA, Bass EB. Duration of oral anticoagulation for venous thromboembolism: A systematic review of the literature. *Am J Hematol*. 2006; 81(9):684-691. [OR]
20. Kim HS, Patra A, Paxton BE, Khan J, **Streiff MB**. Adjunctive percutaneous mechanical thrombectomy for lower extremity deep vein thrombosis: Clinical and economic outcomes. *J Vasc Intervent Radiol*. 2006; 17(7):1099-1104. [OR]
21. Kim HS, Patra A, Paxton BE, Khan J, **Streiff MB**. Catheter-directed thrombolysis with percutaneous rheolytic thrombectomy vs. thrombolysis alone in upper and lower extremity DVT. *Cardiovasc Intervent Radiol*. 2006; 29(6):1003-1007. [OR]
22. Gerber DE, Segal JB, Salhotra A, Olivi A, **Streiff MB**. Venous thromboembolism occurs rarely in post-operative meningioma patients receiving combined modality prophylaxis. *Cancer*. 2007; 109(2):300-305. [OR]
23. Segal JB, ***Streiff MB**, Hoffman LV, Thornton K, Bass EB. Management of venous thromboembolism with low molecular weight heparin, catheter-directed thrombolysis, vena cava filters, compression stockings and oral anticoagulants: a systematic review of the evidence. *Ann Intern Med*. 2007; 146(3):211-222. * Data collection/analysis, manuscript editing [OR]
24. Ahonkhai AA, Gebo KA, ***Streiff MB**, Moore RD, Segal JB. Venous thromboembolism in patients with HIV/AIDS: A case-control study. *J Acquir Immune Defic Syndr*. 2008; 48(3):310-314. * Study design, manuscript editing [OR]
25. Kim HS, Preece SR, Black JH, Pham LD, **Streiff MB**. Safety of catheter-directed thrombolysis for deep venous thrombosis in cancer patients. *J Vasc Surg*. 2008; 47(2):388-394. [OR]
26. Kim HS, Young MJ, Narayan AK, Hong K, Liddell RP, **Streiff MB**. A comparison of clinical outcomes with retrievable and permanent inferior vena cava filters. *J Vasc Interv Radiol*. 2008; 19:393-399. [OR]
27. Gerber DE, Segal JB, Levy MY, Kane J, Jones RJ, **Streiff MB**. The incidence of and risk factors for venous thromboembolism (VTE) and bleeding among 1,514 patients undergoing hematopoietic stem cell transplantation: Implications for VTE prevention. *Blood*. 2008; 112(3):504-510. [OR]
28. Biscup-Horn P, ***Streiff MB**, Ulbrich T, Nesbit TW, Shermock KM. Impact of an anticoagulation management service on inpatient clinical and economic outcomes. *Ann Pharmacother*. 2008; 42(6):777-782. * Study design, Data collection/analysis, manuscript editing [OR] [QI/SI]
29. Shermock KM, Connor JT, Lavalley DC and **Streiff MB**. Clinical decision-making as the basis for assessing agreement between measures of the International Normalized Ratio. *J Thromb Haemost*. 2009; 7(1):87-93. [OR] [QI/SI]
31. Zhan H, ***Streiff MB**, King KE, Segal JB. Thrombotic thrombocytopenic purpura at the Johns Hopkins Hospital from 1992 to 2008: Clinical outcomes and risk factors for relapse. *Transfusion*. 2010; 50(4):868-874. * Study design, data collection/analysis, manuscript editing [OR]
32. Shermock KM, Connor JT, Lavalley DC, **Streiff MB**. Assessment of agreement between INR measures must correspond to a clinical reality. *Clin Chim Acta*. 2010; 411(17-18):1384-1385. [OR] [QI/SI]
33. Shermock KM, Clarke W, **Streiff MB**. A superior method to report clinically relevant quality information about the point-of-care INR device performance compared with the International Organization for Standardization guidelines. *Clin Chim Acta*. 2010; 411(21-22):1756-1760. [OR] [QI/SI]
34. Dalrymple PW, Lehmann HP, Roderer NK, **Streiff MB**. Applying evidence in practice: a qualitative case study of the factors affecting residents' decisions. *Health Informatics J*. 2010; 16(3):177-188. [OR]
35. Raman R, Leming PD, Bhandari M, Long D, **Streiff MB**. Inferior vena cava filters in the management of cancer-associated venous thromboembolism: A systematic review. *Oncol Rev* 2010; 4(3):147-157. [OR]
36. Muellner SK, Haut ER, ***Streiff MB**, Holcomb JB, Cotton BA. ABO blood group as a potential risk factor for venous thromboembolism in acutely injured patients. *Thromb Haemost*. 2011; 105(1):5-13. * Data analysis, manuscript editing [OR]
37. Haut ER, Schneider EB, Patel A, ***Streiff MB**, Haider AH, Stevens KA, Chang DC, Neal ML, Hoefft

- C, Nathens AB, Cornwell EE 3rd, Pronovost PJ, Efron DT. Duplex Ultrasound Screening for Deep Vein Thrombosis in Asymptomatic Trauma Patients: A Survey of Individual Trauma Surgeon Opinions and Current Trauma Center Practices. *J Trauma*. 2011; 70(1):27-34. * Data analysis, manuscript editing [OR]
38. Wellman JC, Kraus PS, Burton BL, Ensor CR, Nesbit TW, Ross PA, Thomas ML, **Streiff MB**. Development and implementation of a pharmacist-managed inpatient anticoagulation monitoring program. *Am J Health Syst Pharm*. 2011; 68(10):934-939. [OR] [QI/SI]
39. Boelig MM, ***Streiff MB**, Hobson DB, Kraus PS, Pronovost PJ, Haut ER. Are sequential compression devices commonly associated with in-hospital falls? A myth-busters review using the patient safety net database. *J Patient Saf*. 2011; 7(2):77-79. * Study design, data analysis, manuscript editing [OR]
40. Shermock KM, ***Streiff MB**, Pinto BL, Kraus P, Pronovost PJ. Novel analysis of clinically relevant diagnostic errors in point-of-care devices. *J Thromb Haemost*. 2011; 9(9):1769-1775. * Data analysis, manuscript editing [OR] [QI/SI]
41. Tabibian JH, **Streiff MB**. Inflammatory bowel disease-associated thromboembolism: A systematic review of outcomes with anticoagulation versus catheter-directed thrombolysis. *Inflamm Bowel Dis*. 2012; 18(1):161-171. [OR]
42. Mayer RS, ***Streiff MB**, Hobson DB, Halpert DE, Berenholtz SM. Evidence-based venous thromboembolism prophylaxis is associated with a six-fold decrease in numbers of symptomatic venous thromboembolism in rehabilitation inpatients. *PM R*. 2011; 3(12):1111-1115. * Study design, data collection/analysis, manuscript editing [OR] [QI/SI]
43. Shermock KM, Tandon S, Sorgen PJ, Lavallee DC, Clarke W, **Streiff MB**. Comparative performance of two methods that assess the quality of international normalized ratio measures. *Clin Biochem*. 2012; 45(7-8):530-534. [OR] [QI/SI]
44. **Streiff MB**, Carolan HT, Hobson DB, Kraus PS, Holzmueller CG, Demski R, Lau BD, Biscup-Horn P, Pronovost PJ, Haut ER. Lessons from the Johns Hopkins Multi-Disciplinary Venous Thromboembolism (VTE) Prevention Collaborative. *BMJ*. 2012; 344:e3935. [OR] [QI/SI]
45. Haut ER, Lau BD, Kraenzlin FS, Hobson DB, Kraus PS, Carolan HT, Haider AH, Holzmueller CG, Efron DT, Pronovost PJ, **Streiff MB**. Improved prophylaxis and decreased rates of preventable harm with the use of a mandatory computerized clinical decision support tool for prophylaxis for venous thromboembolism in trauma. *Arch Surg*. 2012; 147(10):901-907. [OR] [QI/SI]
46. Carter KL, ***Streiff MB**, Ross PA, Wellman JC, Thomas ML, Kraus PS, Shermock KM. Analysis of the projected utility of dabigatran, rivaroxaban, and apixaban and their future impact on existing Hematology and Cardiology Anticoagulation Clinics at The Johns Hopkins Hospital. *J Thromb Thrombolysis*. 2012; 34(4):437-445. * Study design, data collection/analysis, manuscript editing [OR]
47. Darbari DS, Desai D, Arnaldez F, Desai K, Kallen J, Strouse J, ***Streiff MB**, Hong K, Takemoto CM. Safety and efficacy of catheter directed thrombolysis in children with deep venous thrombosis. *Br J Haematol*. 2012; 159(3):376-378. * Data analysis, manuscript editing [OR]
48. Narayan A, Eng J, Carmi L, McGrane S, Ahmed M, Sharrett AR, ***Streiff MB**, Coresh J, Powe N, Hong K. Iliac vein compression as risk factor for left-versus right-sided deep venous thrombosis: Case-control study. *Radiology*. 2012; 265(3):949-957. * Study design, data analysis, manuscript editing [OR]
49. Likes K, Rochlin D, Nazarian SM, ***Streiff MB**, Freischlag JA. Females with subclavian vein thrombosis may have an increased risk of hypercoagulability. *JAMA Surg*. 2013; 148(1):44-49. * Data collection/analysis, manuscript editing [OR]
50. Monn MF, Haut ER, Lau BD, ***Streiff MB**, Wick EC, Efron JE, Gearhart SL. Is venous thromboembolism in colorectal surgery patients preventable or inevitable? One institution's experience. *J Am Coll Surg*. 2013; 216(3):395-401. * Study design, data collection/analysis, manuscript editing [OR]
51. Takemoto CM, ***Streiff MB**, Shermock KM, Kraus PS, Chen J, Jani J, Kickler T. Activated partial thromboplastin time and anti-Xa measurements in heparin monitoring: biochemical basis for discordance. *Am J Clin Pathol*. 2013; 139(4):450-456. * Study design, data collection/analysis, manuscript editing [OR]
52. Aboagye JK, Lau BD, Schneider EB, ***Streiff MB**, Haut ER. Linking processes and outcomes: a key strategy to prevent and report harm from venous thromboembolism in surgical patients. *JAMA Surg*. 2013; 148(3):299-300. * Data analysis, manuscript editing [OR] [QI/SI]
53. Naik RP, ***Streiff MB**, Haywood C Jr, Nelson JA, Lanzkron S. Venous Thromboembolism in adults with sickle cell disease: A serious and under-recognized complication. *Am J Med*. 2013; 126(5):443-449. * Study design, data analysis, manuscript editing [OR]

54. Shermock KM, Lau BD, Haut ER, Hobson DB, Ganetsky VS, Kraus PS, Efird LE, Lehmann CU, Pinto BL, Ross PA, **Streiff MB**. Patterns of non-administration of ordered doses of venous thromboembolism prophylaxis: Implications for novel intervention strategies. *PLoS One*. 2013; 8(6):e66311. [OR] [QI/SI]
55. Zeidan AM*, **Streiff MB***, Lau BD, Ahmed SR, Kraus PS, Hobson DB, Carolan H, Lambrianidi C, Horn PB, Shermock KM, Tinoco G, Siddiqui S, Haut ER. Impact of a venous thromboembolism (VTE) prophylaxis "smart order set": Improved compliance, fewer events. *Am J Hematol*. 2013; 88(7):545-549. * equal first author effort - * Study design, data collection/analysis, manuscript writing and editing [OR] [QI/SI]
56. Shinohara RT, Narayan AK, Hong K, Kim HS, Coresh J, **Streiff MB**, Frangakis CE. Estimating parsimonious models of longitudinal causal effects using regressions on propensity scores. *Stat Med*. 2013; 32(22):3829-3837. * Manuscript editing [OR]
57. Takemoto CM, Sohi S, Desai K, Bharaj R, Khanna A, McFarland S, Klaus S, Irshad A, Goldenberg NA, Strouse JJ, **Streiff MB**. Hospital-Associated Venous Thromboembolism in Children: Incidence and Clinical Characteristics. *J Pediatr*. 2014; 164(2):332-338. [OR]
58. Lonze BE, Zachary AA, Magro CM, Desai NM, Orandi BJ, Dagher NN, Singer AL, Carter-Monroe N, Nazarian SM, Segev DL, **Streiff MB**, Montgomery RA. Eculizumab prevents recurrent antiphospholipid antibody syndrome and enables successful renal transplantation. *Am J Transplant*. 2014; 14(2):459-465. * Data analysis, manuscript editing [OR]
59. Bishop MA, **Streiff MB**, Ensor CR, Tedford RJ, Russell SD, Ross PA. Pharmacist-managed international normalized ratio patient self-testing is associated with increased time in therapeutic range in patients with left ventricular assist devices at an academic medical center. *ASAIO J*. 2014; 60(2):193-198. * Study design, data analysis, manuscript editing [OR] [QI/SI]
60. Newman MJ, Kraus PS, Shermock KM, Lau BD, Haut ER, Hobson DB, **Streiff MB**. Non-administration of thromboprophylaxis in hospitalized patients with HIV: A missed opportunity for prevention? *J Hosp Med*. 2014; 9(4): 215-220. [OR] [QI/SI]
61. Johnbull EA, Lau BD, Schneider EB, **Streiff MB**, Haut ER. No association between hospital-reported perioperative venous thromboembolism prophylaxis and outcome rates in publicly reported data. *JAMA Surg*. 2014; 149(4):400-401. * Data analysis, manuscript editing [OR] [QI/SI]
62. Monn MF, Hui X, Lau BD, **Streiff M**, Haut ER, Wick EC, Efron JE, Gearhart SL. Infection and venous thromboembolism in patients undergoing colorectal surgery: What is the relationship? *Dis Colon Rectum*. 2014; 57(4): 497-505. * Manuscript editing [OR]
63. Elder S, Hobson DB, Rand CS, **Streiff MB**, Haut ER, Efird LE, Kraus PS, Lehmann CU, Shermock KM. Hidden barriers to delivery of pharmacological venous thromboembolism prophylaxis: The role of nursing beliefs and practices. *J Patient Saf. J Patient Saf*. 2016 Jun; 12(2):63-8. * Study design, data analysis, manuscript editing [OR] [QI/SI]
64. Narayan A, Hong K, **Streiff M**, Shinohara R, Frangakis C, Coresh J, Kim HS. The impact of cancer on the clinical outcome of patients after inferior vena cava filter placement: A retrospective cohort study. *Am J Clin Oncol*. 2016 Jun; 39(3):294-301. * Study design, data collection/analysis, manuscript editing [OR]
65. Zeidan AM, Wellman J, Forde PM, Bolaños-Meade J, **Streiff MB**. Venous thromboembolism prophylaxis in hematopoietic stem cell transplantation patients: an international web-based survey of healthcare providers. *J Thromb Thrombolysis*. 2014; 37(4):524-526. [OR]
66. Zwicker JJ, Rojan A, Campigotto F, Rehman N, Funches R, Connolly G, Webster J, Aggarwal A, Mobarek D, Faselis C, Neuberg D, Rickles FR, Wun T, **Streiff MB**, Khorana AA. Pattern of frequent but nontargeted pharmacologic thromboprophylaxis for hospitalized patients with cancer at academic medical centers: A prospective, cross-sectional, multicenter study. *J Clin Oncol*. 2014; 32(17):1792-1796. * Data collection/analysis, manuscript editing [OR]
67. Amankwah EK, Atchison CM, Arlikar S, Ayala I, Barrett L, Branchford BR, **Streiff M**, Takemoto C, Goldenberg NA. Risk factors for hospital-associated venous thromboembolism in the neonatal intensive care unit. *Thromb Res*. 2014; 134(2):305-309. * Data analysis, manuscript editing [OR]
68. Atchison CM, Arlikar S, Amankwah E, Ayala I, Barrett L, Branchford BR, **Streiff M**, Takemoto C, Goldenberg NA. Development of a new risk score for hospital-associated venous thromboembolism in non-critically ill children: Findings from a large single-institutional case-control study. *J Pediatr*. 2014; 165(4):793-798. * Data analysis, manuscript editing [OR]
69. Naik RP, **Streiff MB**, Haywood C Jr, Segal JB, Lanzkron S. Venous thromboembolism incidence in the Cooperative Study of Sickle Cell Disease. *J Thromb Haemost*. 2014; 12(12):2010-2016. * Data analysis, manuscript editing [OR]

70. Lau BD, Haider AH, ***Streiff MB**, Lehmann CU, Kraus PS, Hobson DB, Kraenzlin FS, Zeidan AM, Pronovost PJ, Haut ER. Eliminating health care disparities with mandatory clinical decision support: The venous thromboembolism (VTE) example. *Med Care*. 2015; 53(1):18-24. * Study design, data collection/analysis, manuscript editing [OR] [QI/SI]
71. Wong A, Kraus PS, Lau BD, ***Streiff MB**, Haut ER, Hobson DB, Shermock KM. Patient preferences regarding pharmacologic venous thromboembolism prophylaxis. *J Hosp Med*. 2015; 10(2):108-111. * Study design, data collection/analysis, manuscript editing [OR] [QI/SI]
72. Hohner EM, Kruer RM, Gilmore VT, ***Streiff M**, Gibbs H. Unfractionated heparin dosing for therapeutic anticoagulation in critically ill obese adults. *J Crit Care*. 2015; 30(2):395-399. * Study design, data analysis, manuscript editing [OR] [QI/SI]
73. Michtalik HJ, Carolan HT, Haut ER, Lau BD, ***Streiff MB**, Finkelstein J, Pronovost PJ, Durkin N, Brotman DJ. Use of provider-level dashboards and pay-for-performance in venous thromboembolism prophylaxis. *J Hosp Med*. 2015; 10(3):172-178. * Study design, data collection/analysis, manuscript editing [OR] [QI/SI]
74. Steele KE, Canner J, Prokopowicz G, Verde F, Beselman A, Wyse R, Chen J, ***Streiff M**, Magnuson T, Lidor A, Schweitzer M. The EFFORT trial: Preoperative enoxaparin versus postoperative fondaparinux for thromboprophylaxis in bariatric surgical patients: a randomized double-blind pilot trial. *Surg Obes Relat Dis*. 2015; 11(3):672-683. * Data analysis, manuscript editing [OR]
75. Trucco M, Lehmann CU, Mollenkopf N, ***Streiff MB**, Takemoto CM. Retrospective cohort study comparing activated partial thromboplastin time versus anti-factor Xa activity nomograms for therapeutic unfractionated heparin monitoring in pediatrics. *J Thromb Haemost*. 2015; 13(5):788-794. * Study design, data analysis, manuscript editing [OR] [QI/SI]
76. Gavriilaki E, Yuan X, Ye Z, Ambinder AJ, Shanbhag SP, ***Streiff MB**, Kickler TS, Moliterno AR, Sperati CJ, Brodsky RA. Modified Ham test for atypical hemolytic uremic syndrome. *Blood*. 2015; 125(23):3637-3646. * Data collection, manuscript editing [OR]
77. Lau BD, Haut ER, Hobson DB, Kraus PS, Maritim C, Austin JM, Shermock KM, Maheshwari B, Allen PX, Almario A, **Streiff MB**. ICD-9 code-based venous thromboembolism performance targets fail to measure up. *Am J Med Qual*. 2016 Sep; 31(5):448-53. [OR] [QI/SI]
78. Arlikar SJ, Atchison CM, Amankwah EK, Ayala IA, Barrett LA, Branchford BR, ***Streiff MB**, Takemoto CM, Goldenberg NA. Development of a new risk score for hospital-associated venous thromboembolism in critically-ill children not undergoing cardiothoracic surgery. *Thromb Res*. 2015 Oct; 136(4):717-22. * Data analysis, manuscript editing [OR] [QI/SI]
79. Lau BD, ***Streiff MB**, Pronovost PJ, Haider AH, Efron DT, Haut ER. Attending Physician Performance Measure Scores and Resident Physicians' Ordering Practices. *JAMA Surg*. 2015 Aug; 150(8):813-4. * Data collection, manuscript editing [OR] [QI/SI]
80. **Streiff MB**, Ye X, Kickler TS, Desideri S, Jani J, Fisher J, Grossman SA. A prospective multicenter study of venous thromboembolism in patients with newly-diagnosed high-grade glioma: hazard rate and risk factors. *J Neurooncol*. 2015 Sep; 124(2):299-305. [OR]
81. Haut ER, Lau BD, Kraus PS, Hobson DB, Maheshwari B, Pronovost PJ, **Streiff MB**. Preventability of hospital-acquired venous thromboembolism. *JAMA Surg*. 2015; 150(9):912-915. [OR] [QI/SI]
82. Lee EJ, Smith BD, Merrey JW, Lee AI, Podoltsev NA, Barbarotta L, Litzow MR, Prebet T, Luger SM, Gore S, ***Streiff MB**, Zeidan AM. Patterns of venous thromboembolism prophylaxis during treatment of acute leukemia: Results of a North American web-based survey. *Clin Lymphoma Myeloma Leuk*. 2015 Dec; 15(12):766-770. * Study design, data collection/analysis, manuscript editing [OR]
83. Tamrazi A, Wadhwa V, Holly B, Bhagat N, Marx JK, ***Streiff M**, Lessne ML. Percutaneous retrieval of permanent inferior vena cava filters. *Cardiovasc Intervent Radiol*. 2016 Apr; 39(4):538-46. * Data analysis, manuscript editing [OR]
84. Lau BD, Arnaoutakis GJ, ***Streiff MB**, Howley IW, Poruk KE, Beaulieu R, Ellison TA, Van Arendonk KJ, Kraus PS, Hobson DB, Holzmueller CG, Black JH 3rd, Pronovost PJ, Haut ER. Individualized Performance Feedback to Surgical Residents Improves Appropriate Venous Thromboembolism Prophylaxis Prescription and Reduces Potentially Preventable VTE: A Prospective Cohort Study. *Ann Surg*. 2016 Dec; 264(6):1181-1187. * Data collection/analysis, manuscript editing [OR] [QI/SI]
85. Sankey EW, Lopez J, Zhong SS, Susarla H, Jusué-Torres I, Liauw J, Huang J, ***Streiff M**, Brem H, Gordon CR. Anticoagulation for Hypercoagulable Patients Associated with Complications after Large

- Cranioplasty Reconstruction. *Plast Reconstr Surg.* 2016 Feb; 137(2):595-607. * Data analysis, manuscript editing. [OR]
86. Yu TT, Nelson J, ***Streiff MB**, Lanzkron S, Naik RP. Risk factors for venous thromboembolism in adults with hemoglobin SC or S β (+) thalassemia genotypes. *Thromb Res.* 2016 May; 141:35-8. *Manuscript editing. [OR]
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Books, Textbooks [BK]

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2. Kickler TS, **Streiff MB**. Johns Hopkins Hospital Coagulation Laboratory Handbook. 3rd edition, 2007. [BK]
3. Kickler TS, **Streiff MB**. Johns Hopkins Hospital Coagulation Laboratory Handbook. 4th edition, 2013. [BK]
4. Lau JF, Barnes GD **Streiff MB**, (eds.) Anticoagulation Therapy. 1st edition. Springer 2018. [BK]
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Other Publications:

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

1. Baglin TP, Bush J, **Streiff MB**. Guidelines on use of vena cava filters. British Committee for Standards in Haematology. *Brit J Haematol* 2006; 134(6):590-595. [GL]
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2. Brotman DJ, **Streiff MB**. Invited commentary on “Ibrahim SA, Stone RA, Obrosky DS, Geng M, Fine MJ, and Aujesky D. Thrombolytic Therapy and Mortality in Patients With Acute Pulmonary Embolism *Arch Intern Med.* 2008;168(20):2183-2190.” *Arch Intern Med* 2008; 168:2191-2192. [ED]
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Letters [LT]

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4. **Tabibian JH, Streiff MB**. Venous thromboembolism in hospitalized patients with cirrhosis. Clin Gastroenterol Hepatol. 2011; 9(4):365. [LT]
5. Shermock KM, Kraus P, **Streiff MB**. Novel analysis of clinically relevant diagnostic errors in point-of-care devices: a reply to a rebuttal. J Thromb Haemost. 2012; 10(6):1192-1194. [LT]
6. **Naik RP, Streiff MB**, Lanzkron S. The reply. Am J Med. 2013; 126(10):e15.
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11. Owodunni OP, Lau BD, **Streiff MB**, Kraus PS, Hobson DB, Shaffer DL, Webster KLW, Kia MV, Holzmüller CG, Haut ER. What the 2018 ASH venous thromboembolism guidelines omitted: nonadministration of pharmacologic prophylaxis in hospitalized patients. Blood Adv. 2019 Feb 26;3(4):596-598. doi: 10.1182/bloodadvances.2018030510. No abstract available. PMID: 30792188

Other media (films, videos, CD-ROMS, slide sets, etc.) [OM]

1. **Streiff MB**, Linkinhoker M, Dang CV. Instructional computer animation of the coagulation cascade, 2000. (Used for teaching medical students the coagulation cascade during the Pathophysiology Course). Available at <http://www.hopkinsmedicine.org/hematology/Coagulation.swf> [OM]
2. **Streiff MB**, Aboumatar H in conjunction with the Center for Innovations in Quality Patient Care. E-learning module on venous thromboembolism prevention in the hospitalized patient, 2006 (Used for teaching house staff and faculty about an evidence based approach to VTE Prophylaxis). Available through Johns Hopkins Interactive at <http://learn.jhinteractive.com/ihhtml/application/student/interface.jhu/index.htm?login> [OM]
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 6. Locke C, Feldman L, **Streiff MB**. Johns Hopkins consultative medicine essentials for hospitalist's E-learning website teaching module on venous thromboembolism, 2009. Available at <http://www.jhcme.com/site/index.cfm> [OM]
 7. **Streiff MB**. Management of anticoagulation in the perioperative period in the patient with atrial fibrillation. QuantiaMD website module, 2010. [OM]
 8. **Streiff MB**. Management of anticoagulation in the perioperative period for patients with mechanical cardiac valve prostheses. Quantia MD website module, 2010. [OM]
 9. Locke C, Feldman L, **Streiff MB**. Johns Hopkins consultative medicine essentials for hospitalists E-learning website teaching module on venous thromboembolism, 2011. Available at <http://www.jhcme.com/site/index.cfm> [OM]
 10. **Streiff MB**, DeLong M, Thomas M. Johns Hopkins consultative medicine essentials for hospitalists E-learning website teaching module on perioperative management of anticoagulation, 2011. Available at <http://www.jhcme.com/site/index.cfm> [OM]
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 12. Locke C, Feldman L, **Streiff MB**. Johns Hopkins consultative medicine essentials for hospitalists E-learning website teaching module on atrial fibrillation, 2013. Available at <http://www.jhcme.com/site/index.cfm> [OM]
 13. **Streiff MB**. Venous Thromboembolism. Decision Support module on VTE management. Available on Decision Support in Medicine™ <https://www.decisionsupportinmedicine.com/DSM/p/contactus> 2013
 14. **Streiff MB**. Hypercoagulable States. Decision Support module on VTE management. Available on Decision Support in Medicine™ <https://www.decisionsupportinmedicine.com/DSM/p/contactus> 2013
 15. Locke C, Feldman L, **Streiff MB**. Johns Hopkins consultative medicine essentials for hospitalists E-learning website teaching module on surgical VTE prophylaxis, 2014. Available at <http://www.jhcme.com/site/index.cfm> [OM]
 16. Locke C, Feldman L, **Streiff MB**. Johns Hopkins consultative medicine essentials for hospitalists E-learning website teaching module on new oral anticoagulants for stroke prophylaxis in atrial fibrillation, 2015. Available at <http://www.jhcme.com/site/index.cfm> [OM]
 17. Medscape Controversies in Management of VTE Video shoot- Washington DC, 2015 [OM]
 18. Medscape module, Current controversies in Orthopedic VTE Prevention video, Baltimore, MD, 2015 [OM]
 19. Medscape "Current Approach to Outpatient Management of VTE" video Baltimore, MD, 2015 [OM]
 20. Medscape "Current Approach to Management of Cancer-Associated VTE" video Baltimore, MD, 2015 [OM]
 21. Anticoagulation Forum Webinar, Management of Venous Thromboembolism, 2015 [OM]
 22. Johns Hopkins Armstrong Institute webinar, Prevention of Venous Thromboembolism, 2015 [OM]
 23. Medscape Video on "Improving the Quality of Anticoagulation Management", Chicago, IL, 2016 [OM]
 24. **Streiff MB**. Venous Thromboembolism. Update of Decision Support module on VTE management.

Available on Decision Support in Medicine™

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<https://www.decisionsupportinmedicine.com/DSM/p/contactus> 2016 [OM]

FUNDING:

Extramural Funding (current, pending, previous)

Current Grants:

Active

05/14/15-12/31/20 Efficacy and Safety of Rivaroxaban Prophylaxis compared with Placebo in Ambulatory Cancer Patients initiating Systemic Cancer Therapy and at high risk for Venous Thromboembolism
ICD 811404

Janssen Research & Development

\$148,000

Alok Khorana MD

Site PI 4%

Randomized controlled trial of targeted VTE prophylaxis with rivaroxaban in high-risk ambulatory cancer patients

05/01/16-02/28/21 Individualized Performance Feedback on Venous Thromboembolism Prevention Practice
RO1HS024547

AHRQ

\$1,247,190

Elliott R. Haut, MD PhD

Co-investigator 2%

Prospective cohort study of the impact of individualized feedback on VTE prophylaxis performance

Pending

02/01/17-12/31/17 RE-COVERY CVT/PE- Characterization of patients following Acute Venous Thromboembolism (VTE) and assessment of safety and effectiveness of Dabigatran Etxilate (DE) in the Treatment and Secondary prevention of Acute Deep Vein Thrombosis (DVT) and Pulmonary Embolism (PE) in comparison to Vitamin K Antagonist (VKA) in routine clinical practice

Boehringer Ingelheim

Samuel Goldhaber MD

Site PI

Phase 4 post-marketing observational study of dabigatran and other oral anticoagulants in the treatment of VTE

Previous

12/15/07-6-30-11 ADOPT: Apixaban Dosing to Optimize Protection from Thrombosis in medically ill patients

CV185036

Bristol-Myers Squibb Company

\$404,529

PI: Samuel Goldhaber MD

Site PI, 5%

7/7/09- 8/30/13

Predictors of Anticoagulation Control on Warfarin

5-R01-HL-066176-03

NIH-NHLBI

\$319,994

PI: Stephen Kimmel MD, MSCE, Univ of Penn

Site PI, 5%

- 2/13/14 – 9/1/15 APEX- Multicenter, Randomized, Active-Controlled Efficacy and Safety Study Comparing Extended Duration Betrixaban With Standard of Care Enoxaparin for the Prevention of Venous Thromboembolism in Acute Medically Ill Patients
11-019
Portola Pharmaceuticals Inc.
PI: Alexander Cohen, MD
\$94,174
Site PI, 5%
- 7/1/2013-6/30/16 Preventing Venous Thromboembolism: Empowering Patients and Enabling Patient-Centered Care via Health Information Technology
CE-12-11-4489
Patient Centered Outcomes Research Institute (PCORI)
\$1,499,194
PI: Elliott R. Haut
MD Co-investigator,
5%

CLINICAL ACTIVITIES:

Clinical Focus: My clinical focus is the management of venous thromboembolism (VTE) and disorders of hemostasis. This focus prompted me to launch the Johns Hopkins Anticoagulation Management Service in 2003 in collaboration with the Department of Pharmacy. Our multidisciplinary service operates clinics in the Departments of Medicine and Oncology and provides inpatient consultative services for anticoagulation management at the Johns Hopkins Hospital. In addition, I co-founded the Johns Hopkins VTE Collaborative in 2005 which has made numerous contributions to improve VTE prevention at the Johns Hopkins Hospital. I am the adult Medical Director for the Johns Hopkins Comprehensive Hemophilia Treatment Center.

Certification

Medical, other state/government licensure:

1991 – Present Maryland, D42486

Boards, other specialty certification:

1991 American Board of Internal Medicine
1994 American Board of Internal Medicine, Hematology
1995 American Board of Internal Medicine, Medical Oncology

Clinical (Service) Responsibilities:

1997-present Johns Hopkins Hematology Inpatient/Consultation Service, attending physician, 10-14 weeks per year
1997-present Johns Hopkins Hematology Outpatient Clinic, attending physician-two-three days per week
1997-present Bone Marrow/Peripheral Blood Smear Interpretation-every six-to eight weeks
2000-present Johns Hopkins Hematology Postdoctoral Fellows Outpatient Clinic-supervising attending physician-every six to eight weeks
2000-present Johns Hopkins Comprehensive Hemophilia Treatment Center Outpatient Clinic, attending physician, monthly clinic
2000-present Department of Medicine Thayer firm faculty-attending teaching physician- one month a year
2004-present Johns Hopkins Anticoagulation Management Service and Outpatient Clinic, Medical Director, 12 months per year

Clinical Productivity: My clinical duties include 2- 3 half-days each week in my Hematology outpatient clinic and 1 half day in Hemophilia clinic each month. I supervise fellows in the Hematology Fellows clinic 7-8 times each year. I am the inpatient Hematology service attending 11 weeks a year. I interpret peripheral blood smear and bone marrows eight weeks each year. As the Medical Director of the Anticoagulation Management Service, I oversee the clinical operations of the anticoagulation clinics in the Department of Medicine and Oncology which see more than 3500 patients annually. Total RVUs for fiscal year 2016 through May 2016 were 2667.

Clinical Draw from outside local/regional area: Although most of my patients live in the Baltimore-Washington region, I see US patients from as far away as Florida, Oregon, Kansas and Missouri. I see a number of international patients primarily from the Middle East including United Arab Emirates, Saudi Arabia, Qatar, Bahrain and Kuwait. I have also seen patients from South and Central American countries and Southeast Asia.

Membership in or examiner for specialty board: N/A

Clinical Program Building / Leadership:

2003-Present Johns Hopkins Anticoagulation Management Service/Anticoagulation Outpatient Clinic, Medical Director 20% Effort

In 2003, Todd Nesbit and I, under the leadership of Dan Ashby and Chi Dang, collaborated to establish the multidisciplinary Johns Hopkins Anticoagulation Management Service with the purpose of developing and implementing an evidence-based anticoagulation management service for inpatients and outpatients. In October of 2003, we opened the Hematology Anticoagulation Outpatient clinic with 3 half-day clinic sessions and one full-time pharmacist and one full-time physician assistant. In our first year, there were 1200 patient visits. Currently the Hematology AC clinic has 10 half-day sessions per week and 4500 patient visits annually. The Hematology AC clinic is now staffed with 10 pharmacists and trains one pharmacy resident per month. The Oncology AC clinic is staffed with 4 pharmacists and 2 pharmacy residents. Our Hematology outpatient AC clinic that originally had 3 half-day sessions weekly has grown to 10 half-day sessions per week (Clinical Co-Director: Peggy Kraus PharmD). In addition, we have opened an Oncology AC clinic that provides AC management services 5 days a week in the Weinberg Oncology outpatient clinic (Oncology clinic directors: Vicky Brown PharmD and Brad Burton PharmD).

In 2008, our service developed an inpatient training program for pharmacists and started an inpatient anticoagulation management program which now provides anticoagulation consulting services to all the inpatient services, a program initiated by Jessica Wellman PharmD and Patricia Ross PharmD. Our outpatient clinics provide comprehensive anticoagulation services including perioperative anticoagulation management and prevention of post-thrombotic syndrome via our graduated compression stockings clinic at The Johns Hopkins Outpatient Center Pharmacy locations in the Outpatient Center and Monument street. To improve venous health, we have collaborated with the Department of Interventional Radiology to refer appropriate patients for vena cava filter retrieval and catheter-directed pharmacomechanical thrombolysis/thrombectomy. The Anticoagulation Management Service played a key leadership role in the Johns Hopkins Hospital's initiative to fulfill the 2008 National Patient Safety Goals in Anticoagulation. Our team staffs all the subcommittees and leads the steering committee of the Anticoagulation Practice Group in collaboration with Catherine Edwards RN of Quality Improvement. Our warfarin patient education video, "Living with Warfarin" which was supported by the Johns Hopkins Women's Board and filmed by the Johns Hopkins Multimedia was nominated for a patient education video award and has been featured on the Anticoagulation Forum website, an international organization of healthcare professionals dedicated to quality anticoagulation management that has over 3000 members. Our team has also played an important role in the harmonization of anticoagulation management across all 5 Johns Hopkins Medicine entities. We have worked closely with the EPIC team to develop anticoagulation order sets that will be used at all 5 Johns Hopkins Medicine healthcare facilities.

Our service plays a key role in the education of pharmacy residents about anticoagulation management. Each year the ambulatory care and oncology pharmacy resident rotate through the Hematology and Oncology AC clinics to gain experience in the management of anticoagulants. In addition to this hands-on experience, we hold twice monthly AC Clinic conferences via web link with our colleagues at the anticoagulation clinics at the Johns Hopkins Bayview Medical Center and Howard County General Hospital at which residents present recent cases for discussion. We also have had invited speakers lecture at this conference on topics including thrombophilia, venous thromboembolism pathogenesis and management, management of vena cava filters, antiphospholipid syndrome, post-thrombotic

syndrome and thromboprophylaxis of mechanical heart valves, etc. The Anticoagulation Management Service has supervised a number of pharmacy resident research projects, many of which have been presented at national meetings such as the Anticoagulation Forum and the Thrombosis Hemostasis Summit of North America. A number of these projects have been subsequently published. (Original Research references 28, 29, 32-34, 40, 43, 46, and 89; Other media references 3, 4, 5, 7, 8, 10, 12, 16, 23). National and international recognition of our program has resulted in my election to the Board of the Anticoagulation Forum in 2013 and the President of the Medical and Scientific Advisory Board in 2014 for the National Blood Clot Alliance, the largest patient advocacy organization for patients with blood clots. I have also been asked to present numerous topics involving anticoagulation management at national/international meetings including the American Society of Hematology annual meeting, the Society of Hospital Medicine Annual meeting, Anticoagulation Forum, Thrombosis and Hemostasis Summit of North American and at the Food and Drug Administration.

Clinical Demonstration Activities to external audience, on or off campus: N/A

Development of nationally/internationally recognized clinical standard of care: N/A

EDUCATIONAL ACTIVITIES

Educational Focus: My educational focus is teaching medical students, resident and fellows and colleagues about hemostasis and thrombosis, VTE and anticoagulation management. I teach the hemostasis and thrombosis lectures to the medical students each year in the Genes to Society course. In addition I teach medical and surgical house staff and the hematology and oncology fellows about hemostasis, thrombosis and anticoagulation management in their lecture series annually. I have also given lectures on these topics to residents in other training programs inside and outside Johns Hopkins.

Teaching

Classroom instruction

JHMI/Regional

1997-2000	Lecturer, medical students, Medicine clerkship lecture series. The Johns Hopkins University School of Medicine, Baltimore, MD
1997-1998	Lecturer, medical students and residents, Good Samaritan Hematology Lecture Series. Good Samaritan Hospital, Baltimore
1998-present	Lecturer, medical students and residents, Medicine House staff noon conference lecture series, The Johns Hopkins University School of Medicine, Baltimore, MD
1999-present	Lecturer, medical students, Hemostasis and Thrombosis lectures in Pathophysiology/Genes to society Hematology course, The Johns Hopkins University School of Medicine, Baltimore, MD
1999-present	Small group leader, medical students, Pathophysiology/Genes to Society Hematology course, The Johns Hopkins University School of Medicine, Baltimore, MD
2000-2001	Lecturer, graduate students, Pathobiology course, Hemostasis lecture and journal club, The Johns Hopkins University School of Medicine, Baltimore, MD
2000	Lecturer, nursing students, Johns Hopkins School of Nursing seminar on abnormalities in coagulation
2000	Lecturer, pathology residents, Johns Hopkins Department of Pathology Clinical Pathology Unknown Case Conference
2000-present	Lecturer, Oncology fellows, Oncology fellows conference, The Johns Hopkins University School of Medicine, Baltimore, MD
2001-present	Co-Organizer, Lecturer, medical students, medicine, pediatric and pathology residents and fellows as well as faculty, Coagulation rounds, weekly, The Johns Hopkins University School of Medicine, Baltimore, MD
2001-2005	Lecturer, Pathology residents, Johns Hopkins Clinical Pathology Noon Conference
2001	Lecturer, Radiology residents, Johns Hopkins Department of Radiology In service on Anticoagulants and Invasive Procedures
2001	Lecturer, medical students, medicine residents, Hematology and Oncology fellows, Johns

Hopkins Oncology Center Myeloid Disorders Conference

2003 Lecturer, medical residents, Johns Hopkins Bayview House staff Noon Conference

2003 Lecturer, pathology residents, Johns Hopkins Hospital Department of Pharmacy Noon Lecture Series,

2004-2012 Lecturer, radiology residents and interventional radiology fellows, Johns Hopkins Department of Radiology, Interventional Radiology Fellows lecture series, The Johns Hopkins University School of Medicine, Baltimore, MD

2004, 2013 Lecturer, neurology residents and faculty, Department of Neurology Noon Conference, Johns Hopkins Hospital Baltimore MD

2004 Lecturer, nurse and social workers, Johns Hopkins Homecare Noon Conference, Baltimore MD

2004-present Lecturer, surgery residents, Department of Surgery House staff morning conference, The Johns Hopkins University School of Medicine, Baltimore, MD

2004-2008 Lecturer, 4th year medical students, A Rational Approach to anticoagulants, Rational Therapeutics course, The Johns Hopkins University School of Medicine, Baltimore, MD

2004-present Lecturer, Nurses and nurse practitioners, Hematology Service In service lectures for hematology nursing staff

2005 Lecturer, Medical students, residents and post-doctoral fellows, Johns Hopkins Oncology Center Solid Tumor Conference, Johns Hopkins Hospital Baltimore MD

2005 Lecturer, Pathology residents and Transfusion Medicine fellows and faculty, Johns Hopkins Department of Pathology Transfusion Medicine Rounds, Baltimore, MD

2006, 2008, 2009 Lecturer, Physicians, Nurses and Nurse practitioners and staff, Cardiothoracic ICU Rounds Lecture, Johns Hopkins Hospital, Baltimore, MD

2006 Lecturer, Medical residents, MICU Resident Rounds, Johns Hopkins Hospital, Baltimore, MD

2006, 2007, 2012 Lecturer, Orthopedic residents and faculty, Department of Orthopedics Residents Clinical Conference, Johns Hopkins Hospital, Baltimore, MD

2006 Lecturer, Residents and faculty, St. Agnes Cancer Center Rounds, St Agnes Hospital, Baltimore, MD

2006 Lecturer, Medical residents, St. Agnes Medical House staff Noon Conference, St Agnes Hospital, Baltimore, MD

2008 Lecturer, Local hematologists and oncologists, American Society of Hematology Annual Meeting Highlights sponsored by the Leukemia and Lymphoma Society of America at the Center Club, Baltimore MD

2008-2015 Lecturer, NP and PA Students, Surgical Nurse Practitioner/Physician Assistant Lecture Series

2008-present Co-Organizer, lecturer, Pharmacists, nurses and pharmacy residents, AC clinic conference, every 2 weeks, The Johns Hopkins University School of Medicine, Baltimore, MD

2009 Lecturer, OB/GYN residents and faculty, Department of OB/GYN Resident Conference, Johns Hopkins Hospital, Baltimore, MD

2009 Lecturer, Medicine residents, Department of Medicine House staff Noon Conference, Good Samaritan Hospital, Baltimore, MD

2011-present Lecturer, Hematology fellows, Hematology fellows educational lecture series- 2-3 lectures annually, The Johns Hopkins University School of Medicine, Baltimore, MD

2012 Lecturer, Cardiology fellows and faculty, Division of Cardiology Friday Noon Conference, Johns Hopkins, Baltimore, MD

2013 Lecturer, General Internal Medicine fellows and faculty, Johns Hopkins General Internal Medicine Fellows Noon Conference, Johns Hopkins University School of Medicine, Baltimore, MD

2014 Lecturer, Faculty and staff from Johns Hopkins Medicine, Johns Hopkins Clinical Communities, Howard County General Hospital

2014 Lecturer, Providers in the Moore Clinic, HIV Providers Noon Conference, Johns Hopkins Medical Institutions, Baltimore, MD

2014, 2016 Lecturer, Vascular surgery residents, fellows, faculty and staff, Department of Vascular Surgery Residents lecture Series- Johns Hopkins Medical Institutions, Baltimore, MD

2015 Lecturer, Cardiology fellows and faculty, Cardiology Division Noon Conference, Johns Hopkins University School of Medicine, Baltimore, MD

National: N/A

International: N/A

Clinical Instruction:

JHMI/Regional: N/A

National: N/A

International: N/A

CME instruction:

JHMI/Regional:

1999-2008 Lecturer, Post-graduate physicians, The Johns Hopkins Internal Medicine Board Review Course, The Johns Hopkins University School of Medicine, Baltimore, MD

2000-2015 Lecturer, Community physicians and faculty, Topics in Internal Medicine, The Johns Hopkins University School of Medicine, Baltimore, MD

2000 Lecturer, Community physicians and faculty, Critical Issues in Laboratory Medicine/Surgical Pathology, Johns Hopkins University School of Medicine Department of Pathology, Baltimore, MD

2003, 2007 Lecturer, Residents and staff physicians, Upper Chesapeake Health Care System Hematology/Oncology Symposium, Upper Chesapeake Medical Center, Baltimore, MD

2004, 2005 Lecturer, Residents and staff physicians, St. Agnes Hospital Symposium on Coagulation Disorders, St. Agnes HealthCare, Baltimore, MD

2005, 2011 Lecturer, Community cardiologists and faculty, Johns Hopkins Topics in Cardiology, The Johns Hopkins University School of Medicine, Baltimore, MD

2006, 2009, 2013 Lecturer, Physician members of the American College of Physicians-Maryland Chapter, Maryland American College of Physicians Annual Scientific Meeting, Turf Valley Resort, Ellicott City, MD

2007 Lecturer, Residents and staff physicians, 9th Annual Hematology/Oncology Symposium Upper Chesapeake Medical Center- Belair, MD

2010 Lecturer, Physician members of the Mid-Atlantic Chapter of the American Urological Association, American Urological Association Mid-Atlantic Annual Meeting, Nemaquin Resort, PA

2014 Lecturer, Maryland physician members of the Maryland Society of Hospital Medicine, Maryland Society of Hospital Medicine, Hospital Medicine Day Lecture, Columbia MD

National:

1998 Lecturer, Physician Assistants, Hematology Disorders, National Commission on the Certification of Physician Assistants, Baltimore MD 2/27/1998

2007 Lecturer, Attendees of the American Society of Clinical Oncology Annual Meeting, ASCO Symposium: Symptom Clusters in Supportive Care, Chicago IL

2007 Lecturer, Moderator, Attendees at the American Society of Hematology Annual Meeting, Severing the Deadly Tie between Thromboembolism and Cancer: A Case-Based Guide to Thromboprophylaxis in Malignancy, American Society of Hematology Annual Meeting Industry Satellite Symposium sponsored by Sanofi-Aventis, Atlanta, GA

2010 Lecturer and Moderator, Attendees at the American Society of Clinical Oncology Annual Meeting, "Clinical Coagulation Cases in Cancer" Satellite Symposium at the American Society of Oncology Meeting, Chicago, IL

2011 Lecturer, Residents, post-doctoral fellows and faculty, American Society of Hematology Annual

- Meeting Review course- Ochsner Clinic- New Orleans, LA
- 2011 Lecturer, Members of the Oncology Nursing Society, Venous Thromboembolism Prophylaxis- Current and Investigational Drugs Satellite Symposium, Oncology Nursing Society-Boston MA
- 2013 Lecturer, Physicians and allied health professionals, Quest Diagnostics Lab-Bedside Conference Tyson's Corner VA
- 2013 Lecturer, Attendees at the American Society of Hematology Highlights meeting, American Society of Hematology Annual Meeting Highlights- Miami, FL
- 2014 Lecturer, Attendees, Highlights of the Anticoagulation Forum, Miami FL

International

- 2011 Lecturer, Session Chair, Conference attendees, VTE Experts Meeting 2011 sponsored by Sanofi-Aventis- London England UK (2 lectures)
- 2011 Lecturer, Conference attendees, 3rd Annual Obstetrics Update- Corniche Hospital- Abu Dhabi (Three Lectures)
- 2016 Lecturer, Physician staff, Medical Grand Rounds, Saudi-Aramco-Dammam Hospital, Dammam Saudi Arabia
- 2016 Lecturer, Hematology/Oncology staff, Hematology Rounds, King Fahad Specialist Hospital, Dammam, Saudi Arabia

Workshops /seminars:

JHMI/Regional:

- 2005 Speaker, organizer, Faculty and staff, Johns Hopkins Hospital Deep Venous Thrombosis Prevention Collaborative Meetings sponsored by The Center For Innovations in Quality Patient Care, Johns Hopkins Hospital, Baltimore, MD
- 2008 Speaker, Organizer, General Public, National Blood Clot Alliance-“Stop the Clot” community awareness event held at The Al Owens Lecture Hall CRB2 JHMI
- 2008 Speaker, Hemophilia patients and their family members, Hemophilia Foundation of Maryland Conference for patients with bleeding disorders, Baltimore, MD
- 2009-Present Speaker, Organizer, Faculty, residents, fellows, students and allied health professionals, 1st Annual VTE Awareness Day symposium at Hurd Hall, Keynote speakers, Acting Surgeon General, Admiral Steven Galson, John Heit MD, Mayo Clinic, Susan Kahn MD, Johns Hopkins Hospital, Baltimore, MD
- 2009 Speaker, Pharmacist members of MHSP VTE prophylaxis- Maryland Health Systems Pharmacy Association Annual Meeting- Maritime Institute, Linthicum Heights MD 3-28-09
- 2010 Speaker, Organizer, Faculty, residents, fellows, students and allied health professionals, 2nd Annual VTE Awareness Day symposium at Hurd Hall, Keynote speaker, William Geerts, MD
- 2011 Speaker, organizer, Faculty, residents, fellows, students and allied health professionals, 3rd Annual VTE Awareness Day symposium at Hurd Hall, Keynote speaker, Sam Z. Goldhaber, MD, President and Founder North American Thrombosis Forum, Professor of Medicine Harvard University
- 2012 Speaker, Organizer, Faculty, residents, fellows, students and allied health professionals, 4th Annual VTE Awareness Day symposium at Hurd Hall, Keynote speaker, David in Garcia, MD, President of Anticoagulation Forum, Professor of Medicine, University of Washington
- 2013 Speaker, Organizer, Faculty, residents, fellows, students and allied health professionals, 5th Annual VTE Awareness Day symposium at Hurd Hall, Keynote speaker, Joseph Caprini, MD, Professor of Surgery, Northwestern University
- 2013 Speaker, General Public, Stop-The-Clot Forum, National Blood Clot Alliance, Sykesville MD
- 2014 Speaker, Organizer, Faculty, residents, fellows, students and allied health professionals, 6th Annual VTE Awareness Day symposium at Hurd Hall, Keynote speaker, Lisa Richardson MD, MPH, Director of Blood Diseases Branch CDC
- 2015 Speaker, Organizer, Faculty, residents, fellows, students and allied health professionals, 7th Annual VTE Awareness Day symposium at Hurd Hall, Keynote speaker, Mark Crowther, MD,

2016 Professor of Medicine and Pathology, McMaster University
Speaker, Organizer, Faculty, residents, fellows, students and allied health professionals, 8th Annual VTE Awareness Day symposium at Hurd Hall, Keynote speaker, Richard H. White, MD, Professor of Medicine, University of California at Davis

National:

2006 Lecturer, Attendees, Sanofi-Aventis National Investigators Meeting, Las Vegas, Nevada
2006 Lecturer, Attendees, Sanofi-Aventis National Investigators Meeting, Williamsburg, VA
2006 Speaker, Attendees, Eisai Pharmaceutical, Inc. National Investigators Meeting, Orlando, FL
2007 Speaker, Attendees, Sanofi-Aventis National Speakers Training Meeting, invited speaker, San Francisco, CA
2009 Speaker, Members of Society of Hospital Medicine, Society of Hospital Medicine Annual Meeting, Chicago, IL
2009 Speaker and Consultant, Attendees and staff, Centers for Disease Control and Prevention Conference on U.S. Medical Eligibility Criteria for Contraceptive Use, Atlanta, GA
2014 Lecturer, Attendees and staff, Joint Commission Meeting for VTE Prevention Collaborative, Joint Commission, Forest Park IL
2015 Lecturer, Attendees and staff, Johns Hopkins Progress report for the Joint Commission VTE Prevention Collaborative, Los Angeles, CA
2015 Discussant, Attendees and staff, Strategies to Improve VTE Prevention, Joint Commission Leadership Advisory Committee telephone conference
2015 Lecturer, Attendees and staff, Johns Hopkins Progress report for the Joint Commission VTE Prevention Collaborative, Dallas TX
2016 Lecturer, Attendees and staff, Johns Hopkins Progress report for the Joint Commission VTE Prevention Collaborative, Boston, MA

International: N/A

Mentoring

Predoctoral Advisees / Mentees:

2007-2014 Anand Narayan MD PhD, medical student, currently radiology fellow at the Johns Hopkins University School of Medicine (Original research publications 26, 48, 56, 64)

2014-2017 Anthony Serritella, medical student, currently a 4th year medical student at the Johns Hopkins University School of Medicine

Postdoctoral Advisees / Mentees:

2004-2007 David E. Gerber MD, Hematology/Oncology fellow, currently associate professor, Medicine, University of Texas Southwestern, Dallas TX, co-directs the experimental therapeutics program (Original research publications 22 and 27; review article 7)
2004-2007 Christine Hann MD, PhD, Hematology/Oncology Fellow, currently assistant professor of Oncology, Johns Hopkins Kimmel Comprehensive Cancer Center (Review article 6, Book chapters 10 and 15)
2007-2010 Huichun Zhan MD, Hematology/Oncology fellow, currently hematologist/oncologist, James J Peters VA in New York (Original research publication 31 and case report 8)
2007-2010 Ashkan Emadi MD PhD, Hematology/Oncology fellow, currently associate professor, Medicine, University of Maryland (Review articles 13, 14; Case Report 5, Book Chapter 19)
2009-2012 Rakhi Naik MD MHS, Hematology/Oncology fellow, currently assistant professor, Medicine, Johns

2009-2011	Hopkins University School of Medicine (Original research 53, 69, 86; Review article 19) Kimberly L Carter, PharmD, ambulatory care pharmacy resident, Johns Hopkins Hospital, currently Assistant Professor of Pharmacy Practice, Thomas Jefferson University, Philadelphia, PA (Original research 46)
2011-2013	Matthew J. Newman, PharmD, pharmacy resident, Johns Hopkins Hospital, Oncology Clinical Pharmacist, Johns Hopkins Hospital (Original research 60)
2011-2013	Adrian Wong, PharmD, pharmacy resident, Johns Hopkins Hospital, currently Fellow, Outcomes Research and Pharmacy Informatics, Division of General Internal Medicine and Primary Care Brigham and Women's Hospital, Boston, Massachusetts (Original research 71)
2011-2013	Martin J. Bishop, PharmD, ambulatory care pharmacy resident, Johns Hopkins Hospital, currently Clinical Pharmacy Specialist, Ambulatory Care, Johns Hopkins Hospital (Original research 59, 89)
2010-2013	Amer Zeidan MBBS, MHS, Hematology/Oncology fellow, currently assistant professor, Medicine, Yale New Haven Conn (Original research 55, 65, 70, and 82; Review article 15, 22 and 23)
2013-2014	Jonathan Webster MD, medical resident, currently medical oncology fellow, Johns Hopkins University School of Medicine (Original research 66).

Thesis Committees

2009	Anand Narayan, MD PhD, dissertation committee member
2010	Adam Cuker, MD, MSTR, U Penn, thesis committee member
2011	Elliott Haut, MD, PhD, dissertation committee member
2014	Kimberly Steele, MD, PhD dissertation committee member

Educational Program Building/Leadership N/A

Educational Demonstration Activities to external audiences N/A

RESEARCH ACTIVITIES

Research Focus: My clinical research focus is prevention and treatment of venous thromboembolism. Within this area I have focused on identifying defects in VTE prevention and developing strategies to address these clinical care deficits. My work is described in more detail below in the System Innovation and Quality Improvement section.

Research Program Building/Leadership: None

Research Demonstration Activities: None

Inventions, Patents, Copyrights None

Technology Transfer Activities: None

SYSTEM INNOVATION AND QUALITY IMPROVEMENT ACTIVITIES

System Innovation Focus:

System Innovation and Quality Improvement efforts within JHM:

2003-Present	Johns Hopkins Anticoagulation Management Service's contributions to improved anticoagulation management at the Johns Hopkins Hospital and Johns Hopkins Medicine
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Since the Anticoagulation Management service was founded in 2003, we have promoted evidence-based anticoagulation management for Johns Hopkins inpatients and outpatients. We developed evidence-based guidelines for outpatient management of warfarin and low molecular weight heparin as well as the perioperative management of anticoagulation based upon the American College of Chest Physician Guidelines that we have used for our clinic. In 2008 our service played an important role in reviewing and updating Johns Hopkins Hospital Anticoagulation policies for unfractionated heparin, low molecular weight heparin and warfarin in response to Joint Commission's 2008

National Patient Safety Goals for Anticoagulation Management. I chair the Anticoagulation Task Force steering committee that meets quarterly. In addition, AC service team members Jessica Wellman PharmD and Patricia Ross PharmD organized a pharmacist-driven inpatient anticoagulation consult service that resulted in improved patient care and provider satisfaction. (See reference 37 in Research Publications). Working with Dr. Petty, Dr. Karen King and critical care pharmacy providers, we have also spearheaded the development of emergent warfarin and new oral anticoagulant reversal pathways for life-threatening bleeding. In collaboration with Ken Shermock PharmD, PhD we participated in a quality improvement project focusing on different measures of the INR in our clinic. Ken's analysis identified important deficiencies in the point-of-care INR monitor we were using in the clinic, prompting a change in the INR monitor we used for patients. In addition, he developed a unique clinical decision-based analysis of comparative INR measures that we believe is superior to the conventional analytic approach to comparative measures. These anticoagulation management quality improvement projects led to a number of publications from members of the AC service. (Original Research references 28, 29, 32-34, 40, 43, 46, and 89)

2005-present Johns Hopkins Venous Thromboembolism (VTE) Collaborative, Co-Director

In 2005, Paula Biscup, PharmD and I joined Sean Berenholtz MD, PhD and Deb Hobson RN to form the Johns Hopkins Venous Thromboembolism Collaborative to improve Johns Hopkins Hospital's performance in VTE prevention. After holding a series of VTE workshops with providers in different departments, we developed paper risk stratification tool to help clinicians prescribe risk-appropriate VTE prophylaxis. With the advent of electronic order entry, we realized that our paper risk stratification tools were out of the clinical workflow and that we would have to integrate these tools into the electronic order entry system. With Dr. Elliott Haut, Paula (and later Peg Kraus PharmD), Deb and I developed 16 different computer decision support "smart order sets" in conjunction with providers in each of these specialties. These order sets have facilitated significant improvements in VTE prevention at the Johns Hopkins Hospital. Since implementation of the order sets, VTE risk stratification in the Department of Medicine has been consistently above 96% since 2008 and risk appropriate prophylaxis ordering has been consistently above 90% since October of 2010. In conjunction with Murali Padmanaban and Kunal Dukle we developed VTE prophylaxis performance reports that allowed for data-driven improvements that have contributed to Johns Hopkins' consistent and excellent performance on VTE Core Measures and Meaningful Use measures. We have built a multidisciplinary team (including trauma surgeon Elliott Haut, ICU nurses Deb Hobson and Dauryne Shaffer, pharmacist Peg Kraus, medical informatics expert Brandyn Lau as well as statistician Victor Popoola) that has resulted in significant improvements in VTE management at The Johns Hopkins Hospital and 34 publications. (Original Research publications 42, 44, 52, 54, 55, 60, 61, 63, 70, 73, 77, 79, 81, 84, 88, 91, 92, 93; Review articles 18, 24, 30; Guidelines 3, 6, 7, 9-18; and other media 2, 6, 9, 11, 13-15, 17-22, 24, 25). At Johns Hopkins, we demonstrated that one third of all hospital-acquired deep venous thromboses were related to upper extremity central venous catheters and were not preventable with conventional pharmacologic VTE prophylaxis. Our clinical expertise on VTE management resulted in 3M and the Maryland HealthCare Cost Review Commission removing thrombosed aneurysms and upper extremity venous thrombosis from the list of Maryland Hospital Acquired Conditions (MHACs) which has resulted in substantial savings to Johns Hopkins Hospital and other institutions in the state. Our Johns Hopkins VTE Collaborative has been awarded the DVTeam Award by the North American Thrombosis Forum in 2010 and the Healthcare-Associated VTE Challenge Champion by the Centers for Disease Control and Prevention in 2015 (Review Article 30). I have given Grand Rounds locally as well as nationally and internationally on the topic of VTE prevention and management including lectures at the CDC, the American Society of Hematology annual meeting, the National Comprehensive Cancer Network annual meeting and in Saudi Arabia and United Arab Emirates.

System Innovation and Quality Improvement Efforts outside JHMI:

2014-2016 Joint Commission VTE Prevention Improvement Project, team member
Laura Winner, Rich Hill and I are participating as Johns Hopkins Medicine's representatives in a Joint Commission sponsored VTE Prevention Improvement project that includes 4 other institutions including Massachusetts General Hospital, The Cleveland Clinic, Texas Health Resources and Kaiser Permanente. The goal of the project is to share innovations and develop new approaches to improve VTE prevention at the participating institutions. This project is ongoing.

Production of guidelines and/or protocols:

2006 British Committee for Standards in Haematology Guideline on the Use of Vena Cava Filters, co-

- author, no funding support, adopted by the British Committee for Standards in Haematology, has yet to be updated
- 2006 Society for Interventional Radiology Guidelines for the Use of Retrievable and Convertible Vena Cava Filters, co-author, no funding support, adopted by the Society for Interventional Radiology, has not been updated
- 2006-present National Comprehensive Cancer Network Venous Thromboembolism Guideline, member of writing committee since 2006, chairman of guideline committee since 2009, adopted by the NCCN members institutions, updated annually
- 2011-13 International Clinical Practice Guidelines for Management of Venous Thromboembolism in Cancer Patients, co-author, funded and adopted by French National Institute on Cancer, active

System Innovation and Quality Improvement Program Building/Leadership

- 2003-present Johns Hopkins Anticoagulation Management service and Outpatient Clinics, Medical Director (additional description of innovations above)
- 2005-present Johns Hopkins VTE Collaborative, Co-Director (additional description of innovations above)

ORGANIZATIONAL ACTIVITIES

Institutional Administrative Appointments:

- 1999-2001 Member, Clinician Educator Subcommittee
- 2004-present Member, DOM Clinical Operations Committee
- 2004-present Member, DOM Patient Safety Committee
- 2008-present Member and Chairman, Anticoagulation Task Force Steering Committee
- 2009-present Member, DOM Ongoing Professional Performance Evaluation Committee
- 2010 Member, DOM Divisional Salary Review Committee

Editorial Activities:

Editorial Board Appointments - None

Journal Peer Review Activities:

- 2006-present Urology
- 2007-present Acta Haematologica
- 2007-present Annals of Internal Medicine
- 2007-present Blood
- 2007-present Medicine
- 2007-present Ophthalmology
- 2007-present Transfusion
- 2008-present Journal of National Comprehensive Cancer network
- 2008-present New England Journal of Medicine
- 2009-present Blood Coagulation and Fibrinolysis
- 2009-present Cleveland Clinic Journal of Medicine
- 2009-present Haematologica
- 2010-present American Journal of Medicine
- 2010-present Journal of General Internal Medicine
- 2010-present Journal of Thrombosis and Haemostasis
- 2010-present Journal of Vascular and Interventional Radiology
- 2011-present British Journal of Urology
- 2011-present British Medical Journal (BMJ)
- 2011-present Expert Reviews in Cardiovascular Therapy
- 2011-present Journal of Thrombosis and Thrombolysis
- 2011-present Thrombosis and Haemostasis,
- 2012-present Journal of Hospital Medicine

2012-present Thrombosis Research
 2013-present Chest
 2013-present Journal of Clinical Oncology
 2014-present Haemophilia
 2014-present Lancet
 2015-present JAMA Internal Medicine

Other peer review activities:

Advisory Committees, Review Groups/Study Sections:

2005-present Member, Venous Thromboembolism Guidelines Committee, National Comprehensive Cancer Network
 2005 Teleconference Review Group Member of PIOPED III Program Project grant, NIH
 2010 Consultant, U.S. Medical Eligibility Criteria for Contraceptive Use, Centers for Disease Control and Prevention
 2010 Member, International Practice Guideline Committee on Management of Cancer-associated Venous Thromboembolism Chairmen- Harry Buller and Dominique Farge
 2013-present President, Medical and Scientific Advisory Board, National Blood Clot Alliance
 2013-present Board Member, Anticoagulation Forum

Professional Societies

1992-present Member, American College of Physicians
 1995-present Member, American Society of Hematology
 1995-present Member, International Society of Thrombosis and Haemostasis
 2005-present Member, Anticoagulation Forum
 2010-present Fellow, American College of Physicians

Conference Organizer

JHMI/Regional: 2009-present Johns Hopkins DVT Awareness Month Symposium
National: None
International: None

Session Chair

JHMI/Regional: None
National:
 06/09 Outcomes Research II Session Co-Chair with Clive Kearon, ISTH, Boston MA

International: None

Consultantships

2006-2007 Sanofi-Aventis
 2006-2007 Eisai
 2011 Sanofi-Aventis
 2011-2013 Eisai DalteCan Data Safety Monitor Board
 2013-present Bio2Medical Angel Filter Data safety Monitoring Board
 2014- Janssen Calisto Cancer VTE Clinical Trials Portfolio, consultant
 2014-present American Society of Hematology Consult-a-Colleague program
 2015- Janssen Atrial Fibrillation Patient Care Improvement Project
 2015- CSL Behring, Data safety monitoring board

RECOGNITION

Awards, Honors:

- 1983 Valedictorian, Summa Cum Laude, Washington and Lee University, Lexington VA
- 1983-1984 Fulbright Scholar at University of Ulm, West Germany, United States Department of State, Bureau of Educational and Cultural Affairs
- 1991 Leighton R. Cluff Award for the Most Exemplary Physician, University of Florida
- 1994 William R. Bell Prize in Hematology, Johns Hopkins University School of Medicine, Department of Medicine, Division of Hematology
- 1995 ASCO Young Investigator Award, American Society of Oncology
- 1996 C. Lockard Conley Award in Hematology, Johns Hopkins University School of Medicine
- 2006 Osler Medical House staff Award for Outstanding Teaching by a Full-time Faculty Member
- 2010 Osler Medical House staff Award for Outstanding Teaching by a Full-time Faculty Member
- 2010 North American Thrombosis Forum Award Winner for best VTE Prophylaxis system (Hospitals > 200 beds)
- 2015 Centers for Disease Control and Prevention Healthcare-associated Venous Thromboembolism Prevention Challenge Champion- Awardee- Johns Hopkins VTE Collaborative
- 2016 Mary Betty Stevens Award for Clinical Research, Maryland Chapter of the American College of Physicians
- 2017 Armstrong Award for Excellence in Quality and Safety

Invited Talks, Panels

JHMI/Regional:

- 1997-present Lecturer, Post-doctoral fellows and faculty, Hematology Grand Rounds, The Johns Hopkins University School of Medicine, Baltimore, MD
- 1999-present Lecturer, Medical students, residents, post-doctoral fellows and faculty, Department of Medicine Grand Rounds, The Johns Hopkins University School of Medicine, Baltimore, MD
- 1999, 2000, 2002, 2006, 2009, 2011
Lecturer, Medical students, residents, attending staff, Harbor Hospital Center Medical Grand Rounds, Harbor Hospital Medical Center, Baltimore, MD
- 1999-2001 Lecturer, community physicians and faculty, Saturday Medicine Rounds at The Johns Hopkins Hospital, The Johns Hopkins University School of Medicine, Baltimore, MD
- 1999 Lecturer, Residents and staff physicians, Montgomery General Hospital Medical Grand Rounds, Olney MD
- 2000, 2011, 2013
Lecturer, Residents and staff physicians, St. Agnes Hospital Medical Grand Rounds, St. Agnes Hospital, Baltimore MD
- 2001, 2006, 2011, 2016
Lecturer, Residents and staff physicians, Union Memorial Hospital Medical Grand Rounds, Union Memorial Hospital, Baltimore, MD
- 2003, 2005 Lecturer, Residents and faculty, Johns Hopkins OB/Gyn Department Grand Rounds
- 2004-2006 Lecturer, Attendees, New Approaches to Brain Tumor Therapy Consortium Spring Meeting, Baltimore MD
- 2004, 2009, 2015
Lecturer, Residents post-doctoral fellows and faculty, Department of Urology Grand Rounds, Johns Hopkins Hospital, Baltimore, MD
- 2005 Lecturer, Residents and staff physicians, Princes George's Hospital Center Medical Grand Rounds, Cheverly MD
- 2005 Lecturer, Community genetic medicine physicians and allied health professionals, Baltimore Genetics Society Annual Conference, Greater Baltimore Medical Center, Baltimore, MD
- 2005, 2009, 2013
Lecturer, Residents, post-doctoral fellows and faculty, Department of Neurosurgery Grand

Rounds, Johns Hopkins Hospital, Baltimore, MD
2005, 2006, 2013, 2016
Lecturer, Residents and staff physicians, Mercy Medical Center Medical Grand Rounds, Baltimore, MD
2005
Lecturer, Residents and staff physicians and allied health professionals, Department of Emergency Medicine Grand Rounds, St Agnes Hospital, Baltimore, MD
2006
Lecturer, Residents and staff physicians, Sibley Hospital Department of Anesthesia Rounds, Sibley Hospital, Washington, DC
2006
Lecturer, Members of the National Medical Association-Maryland Chapter, National Medical Association Annual Meeting, Baltimore, MD
2006, 2014
Lecturer, Residents and staff physicians, Good Samaritan Hospital Medical Grand Rounds, Baltimore, MD
2006
Lecturer, Residents, post-doctoral fellows and faculty, Georgetown University Hospital Hematology/Oncology Grand Rounds, Georgetown University, Lombardi Cancer Center, Washington DC
2007
Lecturer, Residents, post-doctoral fellows and faculty, West Virginia University Hematology Oncology Grand Rounds, Robert C. Byrd Health Sciences Center, Martinsburg, WV
2007
Lecturer, Residents and staff physicians, Union Medical Center Grand Rounds, Clarksburg, WV
2008
Lecturer, Residents and staff physicians, Mt Nittany Medical Center Medical Grand Rounds, Mt Nittany Medical Center, Pennsylvania State University, State College, PA
2008
Lecturer, Residents, post-doctoral fellows and faculty, Johns Hopkins Division of Nephrology Renal Grand Rounds, Johns Hopkins Hospital, Baltimore, MD
2008
Lecturer, Residents and staff physicians, Frederick Memorial Hospital Medical Grand Rounds, Frederick Memorial Hospital, Frederick, MD
2008
Lecturer, Pharmacy students, residents and staff pharmacists, Department of Pharmacy Grand Rounds, Johns Hopkins Hospital, Baltimore, MD
2008
Lecturer, Residents and staff physicians and allied health professionals, VTE Symposium, Lankenau Hospital, Philadelphia PA
2009
Discussant/Moderator, Physician and allied health professional staff of the Region III MidAtlantic Comprehensive Hemophilia Centers, Region III Hemophilia Meeting, Alexandria, VA
2009
Lecturer, Pharmacist members of the Maryland Health Systems Pharmacy Association, Maryland Health Systems Pharmacy Association Annual Meeting, Maritime Institute, Linthicum Heights MD
2010
Lecturer, Residents and staff physicians and allied health professionals, Lankenau Hospital Medical Grand Rounds- Lankenau Hospital, Philadelphia PA
2010
Lecturer, Residents, post-doctoral fellows and faculty, Johns Hopkins Department of Pathology Grand Rounds- Johns Hopkins Hospital, Baltimore, MD
2010
Lecturer, Physicians, nurses and pharmacists in Quality Improvement, Delmarva Foundation Webinar
2011
Lecturer, Residents, post-doctoral fellows and faculty, Johns Hopkins Bayview Department of Medicine Grand Rounds, Baltimore, MD
2011
Moderator, Physician, nurse and pharmacist members of the North American Thrombosis Forum, North American Thrombosis Forum Awards Ceremony, Boston MA
2011
Lecturer, Residents and staff physicians and allied health professionals Medical Grand Rounds- Suburban Hospital, Bethesda, MD
2011
Lecturer, Residents, post-doctoral fellows and faculty, Maternal-Fetal Medicine Grand Rounds, John Hopkins Hospital, Baltimore, MD
2011
Lecturer, Residents, post-doctoral fellows and faculty, Department of Anesthesia and Critical Care Medicine Grand Rounds, Johns Hopkins Hospital Baltimore, MD
2012
Lecturer, Residents and staff physicians and allied health professionals, Greater Baltimore Medical Center Joint Medical Surgical Grand Rounds, Baltimore, MD
2012
Lecturer, Residents and staff physicians and allied health professionals, Venous Thromboembolism: the difficult questions 2012- Lankenau Medical Center, Philadelphia PA
2013
Lecturer, Maryland physician members of the Maryland Society of Hospital Medicine, Maryland Society of Hospital Medicine, Hospital Medicine Day Howard County General Hospital Columbia

MD

- 2013 Lecturer, Post-doctoral fellows and faculty, Johns Hopkins Hematologic Malignancies Course, Johns Hopkins Hospital, Baltimore, MD
- 2013 Lecturer, Physicians, Nurses and pharmacists involved in Quality Improvement, Johns Hopkins Patient Safety Summit, Johns Hopkins Medical Institutions, Baltimore, MD
- 2013 Lecturer, Post-doctoral fellows and faculty, Johns Hopkins Oncology Grand Rounds, Johns Hopkins University School of Medicine, Baltimore, MD
- 2014 Lecturer, Residents, post-doctoral fellows and faculty University of MD Hematology Oncology Grand Rounds, University of MD, Baltimore, MD
- 2014 Lecturer, Residents and staff physicians and allied health professionals Anne Arundel Medical Center Grand Rounds, Annapolis MD
- 2014 Lecturer, Residents and staff physicians, Washington Hospital Center Medical Grand Rounds, Washington DC
- 2015 Lecturer, Residents and staff physicians, Greater Baltimore Medical Center Oral and Maxillofacial Surgery Conference, Greater Baltimore Medical Center Baltimore. MD
- 2016 Lecturer, Residents and staff physicians, Atkins Memorial Lecture, York Hospital, York PA
- 2016 Lecturer, Conference Attendees, "Perioperative Management of Anticoagulation"- 2nd Topics in Craniomaxillofacial Surgery- Johns Hopkins Hospital, Baltimore, MD 11-5-16
- 2016 Lecturer, Faculty and House staff, Johns Hopkins Bayview Medical Grand Rounds, "Prevention of Venous Thromboembolism, Johns Hopkins Bayview Medical Center, Baltimore, MD

National:

- 2003 Invited Lecturer, Residents, staff and community physicians, 20th Annual Allan Zieger Symposium, Issues in Hematology/Oncology, sponsored by Botsford General Hospital at Detroit Novi Sheraton, Detroit, Michigan 2005 Invited Lecturer and panel discussant, Members of the Society of Interventional Radiology, Society of Interventional Radiology Annual Meeting Consensus Conference on Vena Cava Filters, Miami, FL
- 2005 Keynote Lecturer, Physician Members of the Western New York Vascular Society, 7th Annual Meeting of the Western New York Vascular Society, Buffalo, NY
- 2006 Lecturer, Residents, post-doctoral fellows and faculty, University of Florida Hematology Grand Rounds, Lecturer, Shands Hospital at The University of Florida, Gainesville, FL
- 2006, 2010, 2016 Lecturer, Post-doctoral fellows and faculty members of the National Comprehensive Cancer Network, National Comprehensive Cancer Network Annual Meeting, Ft. Lauderdale, FL
- 2006 Lecturer, Post-doctoral fellows and faculty members of the National Comprehensive Cancer Network NCCN Annual Quality Improvement Meeting, New York City, New York
- 2006 Lecturer, Physician members of the Cardiothoracic Surgical Critical Care Society, Cardiothoracic Surgical Critical Care Annual Meeting, Washington DC
- 2007 Lecturer, Members of the Society of Interventional Radiology, Society of Interventional Radiology Research Conference, Washington, DC
- 2007 Lecturer, Residents, post-doctoral fellows and faculty, Hematology/Oncology Grand Rounds, Yale New Haven Hospital, Yale University School of Medicine, New Haven, Conn
- 2007 Lecturer, Members of the Society of Interventional Radiology Society of Interventional Radiology Research Conference, Miami, FL
- 2008 Lecturer, Attendees at the Medbiquitous meeting, Improvements in VTE prophylaxis with an electronic order set- Medbiquitous Convention 2008, Baltimore, MD
- 2008 Lecturer, Members of the NCCN VTE Guideline Committee, NCCN VTE Guideline Consensus Conference, Philadelphia PA
- 2008 Lecturer, Physician attendees at the American Society of Clinical Oncology Meeting, Diagnosis and Initial Treatment of Venous Thromboembolism, American Society of Oncology Categorical Course, Chicago, IL
- 2009 Lecturer, Staff and invited faculty, CDC meeting on US Medical Eligibility Criteria for Contraceptive Use, Centers for Disease Control and Prevention, Atlanta, GA
- 2010 Lecturer, Members of the Society of Hospital Medicine, Society of Hospital Medicine Annual

- Meeting, Chicago, IL
- 2010 Lecturer/Awardee, Members of the North American Thrombosis Forum, VTE Prevention using an electronic “Smart Order set” – Award Ceremony for the DVTeam Award for the best innovation in DVT Prevention from a large hospital (> 200 Beds) North American Thrombosis Forum Meeting, Boston, Massachusetts
- 2010 Lecturer, Online attendees, Webinar series by American Association of Blood Banks,
- 2010 Lecturer, On-line attendees, University Healthsystem Consortium webinar
- 2010 Lecturer, Residents and faculty of the University of Rochester and invited faculty, Cancer and Thrombosis Symposium- University of Rochester, Rochester, NY
- 2010 Lecturer, Attendees at the UHC Annual Meeting, University Health System Consortium National Meeting, San Diego CA
- 2010 Lecturer, Post-doctoral fellows and faculty members of the National Comprehensive Cancer Network, NCCN Hematologic Malignancies Annual Congress, NYC, NY
- 2010 Lecturer, Attendees, Pri-Med Conference, Baltimore, MD
- 2010 Lecturer, Attendees, National Managed Care Forum- Las Vegas, NV
- 2010 Lecturer, Members of the Miami OB/GYN society, Miami OB/Gyn Society, Miami, FL
- 2011 Lecturer, Physician, nurse and pharmacist members of the Anticoagulation Forum 11th Annual Anticoagulation Forum, Boston MA
- 2011 Lecturer, Residents, faculty and allied health professionals, Carolinas Med Center and Mecklenburg Medical Group 4th Annual VTE Conference- Charlotte, NC (2 lectures)
- 2011 Lecturer, Residents, post-doctoral fellows and faculty, University of Miami Hematology Grand Rounds, University of Miami, Miami, FL
- 2011 Lecturer, Attendees at the American Society of Hematology Annual Meeting, Consultative Hematology Course at the American Society of Hematology Annual meeting, San Diego CA
- 2012 Lecturer, Physician, Nurse and Pharmacist attendees, “Blood-in-Motion® Conference University of Pittsburgh, Pittsburgh, PA
- 2012 Lecturer, Members attending the MASCC/ISOO Annual meeting, Multinational Association of Supportive Care in Cancer MASCC/International Society of Oral Oncology Annual Meeting, New York NY
- 2012 Lecturer, residents, and staff physicians, St Luke’s Hospital Update in Hematology Conference-St Louis MO
- 2012 Lecturer, Post-doctoral fellows and faculty members of the National Comprehensive Cancer Network, National Comprehensive Cancer Network 7th Annual Congress on Hematologic Malignancies- NYC,NY
- 2012 Lecturer, Members attending the American College of Chest Physicians Annual Meeting, Chest Conference, American College of Chest Physicians Annual Meeting, Atlanta GA
- 2012 Lecturer, Attendees at the American Society of Hematology meeting, American Society of Hematology Annual Meeting Education Program, Atlanta GA
- 2012 Lecturer, Attendees at the American Society of Hematology meeting, American Society of Hematology Annual Meeting Special Symposium on Patient Safety Initiatives Atlanta GA
- 2013 Lecturer, Members of the Society of Hospital Medicine, Society of Hospital Medicine Annual Meeting, National Harbor, MD (2 lectures)
- 2013 Lecturer, Residents, post-doctoral fellows and staff, St Luke’s Hospital Hemostasis Conference, St Lukes Hospital St. Louis MO
- 2013 Lecturer, Staff at the Centers for Disease Control and Prevention, Centers for Disease Control and Prevention Public Health Grand Rounds, Centers for Disease Control- Atlanta GA
- 2013 Lecturer, Residents, faculty and allied health professionals, 6th Annual Venous Thromboembolism Conference at Carolinas Levine Medical Center- Charlotte NC (2 lectures)
- 2013 Lecturer, Pharmacist members of the American Society of Health System Pharmacists, American Society of Health System Pharmacists National Meeting- Orlando FL
- 2013 Lecturer, Members of the Duke Clinical Research Institute and invited guests, Duke Clinical Research Institute, Ritz Carlton Tyson’s Corner VA

- 2013 Lecturer, Staff at VHA facilities, VHA, Inc. “Partnership for Patients education series television program on “Venous Thromboembolism prophylaxis” VHA Inc., Headquarters Irving TX
- 2013 Lecturer, Physician members, Rocky Mountain Oncology Society Meeting- Denver CO
- 2014 Lecturer, Residents, post-doctoral fellows and faculty, University of Iowa DeGowin Memorial Lecture, Iowa City Iowa
- 2014 Lecturer, Residents, physician staff, allied health professionals, AC Forum sponsored education program at Mount Carmel East Hospital Columbus, Ohio
- 2014 Lecturer, Residents, post-doctoral fellows and faculty, Memorial Sloan Kettering Hematology Oncology Grand Rounds, NYC NY
- 2014 Lecturer, Post-doctoral fellows at NCCN institutions, Post-doctoral Fellows Educational Meeting at the NCCN Annual Conference. Hollywood FL
- 2014 Lecturer, Attendees at the American Society of Clinical Oncology Annual Meeting, Hematology for the Oncologist- American Society of Clinical Oncology Special Session, American Society of Oncology Annual Meeting, Chicago, IL
- 2014 Lecturer, Attendees, Premier Healthcare Alliance webinar
- 2014 Lecturer, Attendees of meeting as well as staff, residents, fellows, MD Anderson Conference on Cancer and the Heart, MD Anderson Cancer Center- Houston TX
- 2015 Lecturer, Attendees at annual meeting, Society of Hospital Medicine Annual meeting, National Harbor, MD
- 2015 Lecturer, Attendees, Centers for Disease Control Clinical Immunization Safety Assessment Annual Meeting, Atlanta GA- via webinar
- 2015 Lecturer, Attendees at annual meeting, Society for Cardiovascular Anesthesiologists Annual Meeting, Washington DC
- 2015 Lecturer, Attendees to Annual Meeting including physicians, nurses, pharmacists, 20th Annual Anticoagulation Forum Annual Meeting, Washington DC (2 lectures)
- 2015 Lecturer, Attendees of ACC meeting, American College of Cardiology Anticoagulation Consortium, Heart House, Washington DC
- 2015 Lecturer, 30th Annual Pharmacy Invitational Conference on Antithrombotic Therapy (PICAT), Astor Crowne Plaza Hotel in New Orleans, LA. (2 lectures)
- 2016 Lecturer, Attendees of meeting, Food and Drug Administration Conference on Point-of-Care INR devices: Clinician Perspective Silver Spring MD
- 2016 Lecturer, Conference attendees, Massachusetts General Hospital Symposium on Hematology and Oncology, “Management of Difficult Problems in Hemostasis and Thrombosis” Boston MA
- 2016 Lecturer, ACP Annual meeting attendees, American College of Physicians Annual Meeting, Washington DC
- 2016 Lecturer, Conference attendees, “DOACs should not be used in Cancer Patients”, American Heart Association Meeting, New Orleans, LA
- 2016 Lecturer, Attendees at the American Society of Hematology meeting, Cancer and Thrombosis, American Society of Hematology Annual Meeting Education Program, San Diego CA (2 lectures)
- 2016 Lecturer, Attendees at the American Society of Hematology meeting, “Safety of different anticoagulants for the treatment of venous thromboembolism in patients with cancer”, American Society of Hematology Annual Meeting, San Diego CA

International:

- 2006 Lecturer, Conference attendees, Swiss Society of Hematology Hemostasis Annual Meeting, Invited Speaker, University of Zurich, Zurich, Switzerland
- 2007 Lecturer, Conference attendees 4th International Conference on Thrombosis and Hemostasis Issues in Cancer, Bergamo, Italy
- 2010 Lecturer, Conference attendees, 9th Annual Brazil Conference on HIV/AIDS, Rio De Janiero, Brazil
- 2010 Lecturer, Conference attendees, International Conference on Thrombosis and Hemostasis in Cancer, Stresa on Lake Maggiore Italy

Other Professional Accomplishments

2009, 2011-2016 Baltimore Magazine Top Doctors
2012-2016 America's Top Doctors, Castle Connolly