BIOGRAPHICAL SKETCH

NAME: Stein, Brady L.

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

POSITION TITLE: Associate Professor of Medicine

EDUCATION/TRAINING

INSTITUTION AND LOCATION	DEGREE	Completion Date	FIELD OF STUDY
University of Wisconsin – Madison	BA	05/1998	English Literature
Emory University School of Medicine-Atlanta, GA	MD	05/2003	Medicine
The Johns Hopkins Hospital, Johns Hopkins School of Medicine		06/2006	Internal Medicine
The Johns Hopkins Hospital, Johns Hopkins School of Medicine		06/2010	Hematology
Johns Hopkins Bloomberg School of Public Health	MHS	08/2009	Clinical Investigation

A. Personal Statement

I received Internal Medicine training and fellowship training in hematology from the Johns Hopkins University School of Medicine, where I worked closely with Dr. Alison Moliterno and Dr. Jerry Spivak in Myeloproliferative Neoplasm clinical and translational research. During fellowship, I was an awardee of the K12 Blood Scholars Program, focusing on clinical research in MPNs. During that program, I received an MHS in Clinical Investigation at the Johns Hopkins Bloomberg School of Public Health. I moved to Northwestern University Feinberg School of Medicine in the summer of 2010 as an Attending Physician in Hematology/Oncology. I am specifically interested in clinical and translational investigation within the MPN, and am leading efforts in the MPN program, serving as disease team leader in this area at Northwestern University. I previously focused on the development of a novel MPN treatment concept with Dr. John Crispino, whose laboratory work hadidentified Aurora Kinase A as a novel MPN target. I served as the PI for this investigator-initiated study of an Aurora Kinase A inhibitor, Alisertib which has been published. I also collaborate on translational, MPN focused studies with Dr. Peng Ji, I serve as a scientific advisor for a national non-interventional study of contemporary Polycythemia Vera. I currently serve as a panelist on the NCCN MPN guidelines. I am also committed to the identification of optimal treatments for MPN-thrombosis. I was an invited speaker at the American Society of Hematology on this topic at the 2019 annual meeting, where I also served as the chair of the MPN education session. I have been an abstract reviewer (including coordinating abstract reviewer) for clinical studies in the MPNs for the American Society of Hematology Annual Meeting. I believe that we have a strong MPN foundation at Northwestern and are well-suited to make contributions to the MPN/MPN-thrombosis field based on an established clinical trial infrastructure and close collaboration with translational scientists.

B. Positions and Honors

Positions and Employment

2007 – 2008 Instructor and Assistant Chief of Service, Johns Hopkins Hospital, Department of Medicine, Baltimore, MD

2010 - 2017 Assistant Professor of Medicine, Division of Hematology/Oncology, Department of Medicine, Chicago, IL
2017 - Present Associate Professor of Medicine, Division of Hematology/Oncology, Department of Medicine, Chicago, IL

2010 - Present Attending Physician, Northwestern Memorial Hospital, Chicago, IL

Other Experience and Professional Memberships
2008 - Present Member, American Society of Hematology

Honors
2006 Daniel Baker Jr. Award in Medicine, Johns Hopkins University, Baltimore, MD

C. Contributions to Science

I have devoted my academic career toward the clinical investigation of Myeloproliferative Neoplasms. A proportion of my work has been devoted to the investigation of unique contributors to and aspects of disease phenotype and disease pathogenesis. This work has uncovered gender differences in the *JAK2* allelic burden burden, elucidated differences in clonal dominance within MPN subtypes, demonstrated the prevalence of *ASXL1* mutations in myelofibrosis, and reported on unique disease manifestations of Polycythemia Vera in the young.

1. **Stein BL**, Williams DM, Wang NY, Rogers O, Isaacs MA, Pemmaraju N, Spivak JL, Moliterno AR. Sex differences in the JAK2 V617F allele burden in chronic myeloproliferative disorders. *Haematologica*. 2010 Jul; 95(7):1090-7. PMC2895032

2. **Stein BL**, Williams DM, Rogers O, Isaacs MA, Spivak JL, Moliterno AR. Disease burden at the progenitor level is a feature of primary myelofibrosis: a multivariable analysis of 164 JAK2 V617F-positive myeloproliferative neoplasm patients. *Exp Hematol*. 2011 Jan; 39(1):95-101. PMC3004981

3. **Stein BL**, Williams DM, O'Keefe C, Rogers O, Ingersoll RG, Spivak JL, Verma A, Maciejewski JP, McDevitt MA, Moliterno AR. Disruption of the ASXL1 gene is frequent in primary, post-essential thrombocytosis and post-polycythemia vera myelofibrosis, but not essential thrombocytosis or polycythemia vera: analysis of molecular genetics and clinical phenotypes. *Haematologica*. 2011 Oct; 96(10):1462-9. PMC3186307

4. **Stein BL,** Saraf S, Sobol U, Halpern A, Shammo J, Rondelli D, Michaelis L, Odenike O, Rademaker A, Zakarija A, McMahon B, Spivak JL, Moliterno AR. Age-related Differences in Disease Characteristics and Clinical Outcomes in Polycythemia Vera. *Leuk Lymphoma*. 2013 Sep; 54(9):1989-95. PMID: 23245211

I have also collaborated with translational scientists to identify MPN pathway derangements that could lead to the development of novel treatment strategies. Patient samples have been vital to validating observations from an in vitro system or murine model. The first of these publications below led to a pilot clinical trial which has completed enrollment as of November 2017 and has been subsequently published. I have participated in clinical trials of other JAK inhibitors in development as well.

1. Wen QJ, Yang Q, Goldenson B, Malinge S, Lasho T, Schneider RK, Breyfogle LJ, Schultz R, Gilles L, Koppikar P, Abdel-Wahab O, Pardanani A, **Stein B,** Gurbuxani S, Mullally A, Levine RL, Tefferi A, **Crispino JD**. Targeting megakaryocytic-induced fibrosis in myeloproliferative neoplasms by AURKA inhibition. *Nat Med*. 2015 Dec; 21(12):1473-80. doi: 10.1038/nm.3995. PMC4674320

2. Zhao B, Mei Y, Cao L, Zhang J, Sumagin R, Yang J, Gao J, Schipma MJ, Wang Y, Thorsheim C, Zhao L, Stalker T, **Stein B**, Wen QJ, Crispino JD, Abrams CS, Ji P. Loss of pleckstrin-2 reverts lethality and vascular occlusions in JAK2V617F-positive myeloproliferative neoplasms. J Clin Invest. 2018. PMID: 29202466

3. Gangat N, Marinaccio C, Swords R, Watts JM, Gurbuxani S, Rademaker A, Fought AJ, Frankfurt O, Altman JK, Wen QJ, Farnoud N, Famulare CA, Patel A, Tapia R, Vallapureddy RR, Barath S, Graf A, Handlogten A, Zblewski D, Patnaik MM, Al-Kali A, Dinh YT, Englund Prahl K, Patel S, Nobrega JC, Tejera D, Thomassen A, Gao J, Ji P, Rampal RK, Giles FJ, Tefferi A, **Stein B**, Crispino JD. Aurora Kinase A Inhibition Provides Clinical Benefit, Normalizes Megakaryocytes, and Reduces Bone Marrow Fibrosis in Patients with Myelofibrosis: A Phase I Trial. Clin Cancer Res. Clin Cancer Res. 2019. PMID: 31061068

4. Mascarenhas J, Hoffman R, Talpaz M, Gerds AT, **Stein B**, Gupta V, Szoke A, Drummond M, Pristupa A, Granston T, Daly R, Al-Fayoumi S, Callahan JA, Singer JW, Gotlib J, Jamieson C, Harrison C, Mesa R, Verstovsek S. Pacritinib vs Best Available Therapy, Including Ruxolitinib, in Patients With Myelofibrosis: A Randomized Clinical Trial. JAMA Oncol. 2018. PMID: 29522138

My academic work is also devoted to the development of clinical practice guidelines for rare diseases. With the rapid pace of discovery and translation, it can be an overwhelming task to stay current, particularly in the field of MPNs. Guidance regarding proper diagnosis, supportive care, and therapy of patients with MPNs is be valuable for the practicing hematologists. I currently serve on the NCCN panel for MPNs and have contributed a number of reviews on managing MPNs, including MPN thrombosis.

1. Mesa RA, Jamieson C, Bhatia R, Deininger MW, Fletcher CD, Gerds AT, Gojo I, Gotlib J, Gundabolu K, Hobbs G, McMahon B, Mohan SR1, Oh , Padron E, Papadantonakis N, Pancari P, Podoltsev N, Rampal R, Ranheim E, Reddy V, Rein LAM, Scott B, Snyder DS, **Stein BL**, Talpaz M, Verstovsek S, Wadleigh M, Wang ES, Bergman MA, Gregory KM, Sundar H. NCCN Guidelines Insights: Myeloproliferative Neoplasms, Version 2.2018. *J Natl Compr Canc Netw.* 2017 Oct;15(10):1193-1207. doi: 10.6004/jnccn.2017.0157.

2. Kander EM, Moliterno AR, Rademaker A, Streiff MB, Spivak JL, **Stein BL**. Practice Patterns in the Diagnosis and Treatment of Polycythemia Vera in the Post-JAK2 V617F Discovery Era. *J Natl Compr Canc Netw*. 2016 Oct;14(10):1238-1245.

3. **Stein BL**, Martin K From Budd-Chiari syndrome to acquired von Willebrand syndrome: thrombosis and bleeding complications in the myeloproliferative neoplasms. Blood. 2019. PMID: 31778549 (selected for co-publication in Blood, presented at American Society of Hematology 2019

4. **Stein BL**, Martin K. From Budd-Chiari syndrome to acquired von Willebrand syndrome: thrombosis and bleeding complications in the myeloproliferative neoplasms. Hematology Am Soc Hematol Educ Program. 2019 Dec 6;2019(1):397-406. doi: 10.1182/hematology.2019001318. PMID: 31808903 (Presented at the American Society of Hematology meeting 2019)

Complete List of Published Work in MyBibliography:
https://www.ncbi.nlm.nih.gov/myncbi/1-W0e2YXYmI5E/bibliography/public/

D. Additional Information: Research Support and/or Scholastic Performance

Completed
ACS -IRG 93-037-15 (Stein)
The Role of Tissue Factor and PAI-1 in Thrombosis and Myelofibrosis in the Myeloproliferative Neoplasms
Institutional grant awarded to young investigators pursuing cancer related research.

American Society of Hematology Self-Assessment Program chapter author for both 6th and 7th editions (Myeloproliferative Neoplasms)

Associate Editor, Journal Watch Hematology and Oncology (focus on non-malignant hematology)