BIOGRAPHICAL SKETCH

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NAME: Taylor, Justin

eRA COMMONS USER NAME (credential, e.g., agency login): taylorj7

POSITION TITLE: Assistant Professor

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

INSTITUTION AND LOCATION	DEGREE (if applicable)	END DATE MM/YYYY	FIELD OF STUDY
University of New Mexico, Albuquerque, NM	BS	12/2005	Biology (summa cum laude)
University of New Mexico School of Medicine, Albuquerque, NM	MD	05/2011	Medicine (Alpha Omega Alpha)
National Cancer Institute/ National Institutes of Health, Bethesda, MD	NIH training grant	07/2010	Clinical Research Training Program
Brigham and Women's Hospital/Harvard Medical School, Boston, MA	Resident	06/2014	Internal Medicine
Memorial Sloan Kettering Cancer Center, New York, NY	Fellow	06/2017	Medical Oncology

A. Personal Statement

As an Assistant Professor at the Sylvester Comprehensive Cancer Center (SCCC) at the University of Miami Miller School of Medicine, I have 90% protected time to pursue translational patient-oriented research in my independent laboratory in the Translational and Clinical Oncology (TCO) program at SCCC. My research is focused on understanding the genetic drivers of cancer in order to help discover new therapeutic interventions. My labs focus is on nuclear export alterations in cancer and we have discovered a novel mutation in the nuclear exporter XPO1 at R749Q which is enriched in colorectal cancer. Our preliminary data suggest an active role of the XPO1 mutations in our colorectal cancer models. Funding from the Stanley J. Glaser Research Award would provide critical support for this project to allow us to further dissect these mechanisms and develop our therapeutic targets. Our proposed research aligns equally with the Glaser priority areas of etiology and treatment. As an early stage investigator, funding from foundations like the Stanley J. Glaser Research Award is critical to support our research and become more competitive for NIH independent funding. I also receive amazing institutional support both in terms of lab space and resources but also mentorship and protected time from my Department of Medicine and the SCCC. The results from this proposed project would be used for an NIH R01 research grant proposal to fund further studies related to XPO1 inhibition and combination therapy investigation in patients with colorectal and other cancers.

1. Wang E, Mi X, Thompson MC, Montoya S, Notti RQ, Afaghani J, Durham BH, Penson A, Witkowski MT, Lu SX, Bourcier J, Hogg SJ, Erickson C, Cui D, Cho H, Singer M, Totiger TM, Chaudhry S, Geyer M, Palomba L, Coombs CC, Park J, Zelenetz A, Roeker L, Rosendahl M, Ebata K, Brandhuber B, Aifantis I, Mato A, **Taylor J***, Abdel-Wahab O*. Resistance Mechanisms to Non-covalent Bruton's Tyrosine Kinase Inhibitors. New England Journal of Medicine.2022 Feb 24; 386(8): 735-743 ***co-corresponding**
2. Inoue D*, Polaski J*, **Taylor J***, Castel P, Chen S, Kobayashi S, Hogg S, Hayashi Y, Pineda H, Marabti E, Erickson C, Knorr K, Fukumoto M, Yamazaki H, Tanaka A, Fukui C, Lu SX, Durham BJ, Liu B, Wang E, Mehta S, Zakheim D, Garippa R, Penson A, Chew G, McCormick, F, Bradley RK, Abdel-Wahab O. Minor intron retention drives clonal hematopoietic disorders and diverse cancer predisposition. Nature Genetics 53, 707-718 (2021). ***co-first author**
3. Sekeres M, **Taylor J**. Diagnosis and Treatment of Myelodysplastic Syndromes: A Review. JAMA. 2022 Sep 6;328(9):872-880. doi: 10.1001/jama.2022.14578. PMID: 36066514.

4. **Taylor J,** Mi X, North K, Binder M, Penson A, Lasho T, Knorr K, Haddadin M, Liu B, Pangallo J, Benbarche S, Wiseman D, Tefferi A, Halene S, Liang Y, Patnaik MM, Bradley RK, Abdel-Wahab O. Single-cell genomics reveals the genetic and molecular bases for escape from mutational epistasis in myeloid neoplasms. Blood. 2020 Sep 24;136(13):1477-1486. PubMed PMID: 32640014; PubMed Central PMCID: PMC7515689.

B. Positions, Scientific Appointments and Honors

Positions and Scientific Appointments

2024 -	Associate Professor, Sylvester Comprehensive Cancer Center at the University of Miami Miller School of Medicine, Miami, FL
2020 - 2024	Assistant Professor, Sylvester Comprehensive Cancer Center at the University of Miami Miller School of Medicine, Miami, FL
2019 - 2020	Assistant Member Level 1, Memorial Sloan Kettering Cancer Center, New York, NY
2017 - 2019	Instructor in Medicine, Memorial Sloan Kettering Cancer Center, New York, NY
2015 - 2017	Post-doctoral Fellow (PI: Omar Abdel-Wahab), Human Oncology and Pathogenesis Program, Memorial Sloan Kettering Cancer Center, New York, NY
2014 - 2017	Hematology Oncology Fellow, Memorial Sloan Kettering Cancer Center, New York, NY
2011 - 2014	Internal Medicine Resident, Brigham and Women's Hospital, Boston, MA
2009 - 2010	Clinical Research Training Program Fellow (PI: Daniel Fowler), National Cancer Institute, National Institutes of Health, Bethesda, MD
2006 - 2011	Medical Student, University of New Mexico School of Medicine, Albuquerque, NM
2005 - 2006	Health Sciences Research Technician (PI: Marianne Berwick), University of New Mexico Comprehensive Cancer Center, Albuquerque, NM

Honors

2024	Outstanding Basic/Translational Researcher of the Year, Sylvester Cancer Center
2023	Schally Research Award, Department of Medicine, University of Miami
2023	Eugene J. Sayfie, MD Mentor Award, University of Miami Miller School of Medicine
2021	American Society for Clinical Investigation (ASCI) Young Physician-Scientist Award, ASCI
2020	Doris Duke Clinical Scientist Development Award, Doris Duke Charitable Foundation
2019	Abstract Achievement Award, American Society of Hematology
2018	Portlock Diversity Award, Memorial Sloan Kettering Cancer Center
2018	Abstract Achievement Award, American Society of Hematology
2017	Medical Faculty Development Program, American Society of Hematology/Robert Woods Johnson
2017	Young Investigator Award, American Society of Clinical Oncology/American Association for Cancer Research
2016 - 2017	Research Training Award for Fellows, American Society of Hematology
2015 - 2017	Clinical Scholars Training Program, Dana Foundation/Memorial Sloan Kettering Cancer Center
2013 - 2014	Hematology Opportunities for the Next Generation of Research Scientists, American Society of Hematology
2016	Selected for Molecular Biology in Clinical Oncology, American Association for Cancer Research
2016	Loan Repayment Program, National Institutes of Health
2013	Travel Award to AAMC Meeting, Partners Healthcare Centers of Excellence
2013	Travel Award, Oral Presentation, American Society of Hematology
2012	Conquer Cancer Foundation Resident Travel Award, American Society of Clinical Oncology
2011	Golden Cane Award, Gold Humanism Society
2010	Leadership Award, American Medical Association Foundation
2010	Travel Award, Oral Presentation, American Society of Hematology
2009	Induction Junior Year, Alpha Omega Alpha Medical Honor Society
2008	Minority Scholars Award, American Medical Association
2008	Endowment for Leukemia Research, Lurie and Lurie Whitlock Foundation

C. Contribution to Science

1. Development of novel therapies for chronic lymphocytic leukemia and other B-cell malignancies

My clinical and research focuses have coalesced in the study of chronic lymphocytic leukemia. I have become an expert at the treatment of this disease and that has led me to recognize that although outcomes are quite good, there are still many areas of unmet need. In that regard, a new direction of my lab is to discover new treatments and also define mechanisms of resistance to current and emerging therapies. This change in direction was inspired by recent discovery of novel resistance mechanisms for non-covalent BTK inhibitors, which have the exciting potential to change the treatment landscape of B-cell malignancies yet remain incompletely understood in terms of detailed resistance mechanisms.

a. Wang E, Mi X, Thompson MC, Montoya S, Notti RQ, Afaghani J, Durham BH, Penson A, Witkowski MT, Lu SX, Bourcier J, Hogg SJ, Erickson C, Cui D, Cho H, Singer M, Totiger TM, Chaudhry S, Geyer M, Palomba L, Coombs CC, Park J, Zelenetz A, Roeker L, Rosendahl M, Ebata K, Brandhuber B, Aifantis I, Mato A, **Taylor J***, Abdel-Wahab O*. Resistance Mechanisms to Non-covalent Bruton's Tyrosine Kinase Inhibitors. New England Journal of Medicine 2022 Feb 24; 386(8): 735-743 ***co-corresponding**

b. Afaghani J, **Taylor J**. A Moving Target: Inactivating BTK Mutations as Drivers of Follicular Lymphoma. Clin Cancer Res. 2021 Apr 15;27(8):2123-2125. PubMed PMID: 33579791; NIHMSID: NIHMS1671241.

c. Mato AR, Shah NN, Jurczak W, Cheah CY, Pagel JM, Woyach JA, Fakhri B, Eyre TA, Lamanna N, Patel MR, Alencar A, Lech-Maranda E, Wierda WG, Coombs CC, Gerson JN, Ghia P, Le Gouill S, Lewis DJ, Sundaram S, Cohen JB, Flinn IW, Tam CS, Barve MA, Kuss B, **Taylor J**, Abdel-Wahab O, Schuster SJ, Palomba ML, Lewis KL, Roeker LE, Davids MS, Tan XN, Fenske TS, Wallin J, Tsai DE, Ku NC, Zhu E, Chen J, Yin M, Nair B, Ebata K, Marella N, Brown JR, Wang M. Pirtobrutinib in relapsed or refractory B-cell malignancies (BRUIN): a phase 1/2 study. Lancet. 2021 Mar 6;397(10277):892-901. PubMed PMID: 33676628.

d. Leeksma AC, **Taylor J***, Wu B, Gardner JR, He J, Nahas M, Gonen M, Alemayehu WG, Te Raa D, Walther T, Hüllein J, Dietrich S, Claus R, de Boer F, de Heer K, Dubois J, Dampmann M, Dürig J, van Oers MHJ, Geisler CH, Eldering E, Levine RL, Miller V, Mughal T, Lamanna N, Frattini MG, Heaney ML, Zelenetz A, Zenz T, Abdel-Wahab O, Kater AP. Clonal diversity predicts adverse outcome in chronic lymphocytic leukemia. Leukemia. 2019 Feb;33(2):390-402. PubMed Central PMCID: PMC6718955. ***co-first author**

2. Defining mechanisms of nuclear export alterations in cancer

The Taylor lab studies the role of recurrent mutations in hematologic malignancies and how to target these with novel therapeutics. One focus of the lab is on alterations in nuclear export function due to mutations or overexpression of XPO1. We use molecular biology, genomics, proteomics and mouse modeling to determine the mechanisms and potential targetable weaknesses of these genetic alterations. We also study how XPO1 alterations interact with other mutations and the potential role for combination therapy.

a. Stanchina M, Chaudhry S, Karr M, **Taylor J**. Current State and Challenges in Development of Targeted Therapies in Myelodysplastic Syndromes (MDS). Hemato. 2021 April 30; 2(2):217-236. Available from: https://www.mdpi.com/2673-6357/2/2/13 DOI: 10.3390/hemato2020013

b. **Taylor J**, Mi X, Penson AV, Paffenholz SV, Alvarez K, Sigler A, Chung SS, Rampal RK, Park JH, Stein EM, Tallman MS, Sen F, Gönen M, Abdel-Wahab O, Klimek VM. Safety and activity of selinexor in patients with myelodysplastic syndromes or oligoblastic acute myeloid leukaemia refractory to hypomethylating agents: a single-centre, single-arm, phase 2 trial. Lancet Haematol. 2020 Aug;7(8):e566-e574. PubMed PMID: 32735836.

c. **Taylor J**, Sendino M, Gorelick AN, Pastore A, Chang MT, Penson AV, Gavrila EI, Stewart C, Melnik EM, Herrejon Chavez F, Bitner L, Yoshimi A, Lee SC, Inoue D, Liu B, Zhang XJ, Mato AR, Dogan A, Kharas MG, Chen Y, Wang D, Soni RK, Hendrickson RC, Prieto G, Rodriguez JA, Taylor BS, Abdel-

Wahab O. Altered Nuclear Export Signal Recognition as a Driver of Oncogenesis. Cancer Discov. 2019 Oct;9(10):1452-1467. PubMed Central PMCID: PMC6774834.

3. Common Recurrent Mutations in the Splicing Factor ZRSR2 Exist in Blastic Plasmacytoid Dendritic Cell Neoplasm (BPDCN).

In 2013, I discovered spliceosomal mutations occuring in a hematologic malignancy known as Blastic Plasmacytoid Dendritic Cell Neoplasm (BPDCN). I have continued that work ultimately leading to several publications including one in Cancer Discovery this year. Progress is finally being made in this rare and understudied disease and I hope to continue to contribute to the knowledge-base and potential new therapies for this disease.

a. Batta K, Bossenbroek HM, Pemmaraju N, Wilks DP, Chasty R, Dennis M, Milne P, Collin M, Beird HC, **Taylor J**, Patnaik MM, Cargo CA, Somervaille TCP, Wiseman DH. Divergent clonal evolution of blastic plasmacytoid dendritic cell neoplasm and chronic myelomonocytic leukemia from a shared TET2-mutated origin. Leukemia. 2021 Nov;35(11):3299-3303. PubMed Central PMCID: PMC8550946.
b. Togami K, Chung SS, Madan V, Booth CAG, Kenyon CM, Cabal-Hierro L, **Taylor J**, Kim SS, Griffin GK, Ghandi M, Li J, Li YY, Angelot-Delettre F, Biichle S, Seiler M, Buonamici S, Lovitch SB, Louissaint A, Morgan EA, Jardin F, Piccaluga PP, Weinstock DM, Hammerman PS, Yang H, Konopleva M, Pemmaraju N, Garnache-Ottou F, Abdel-Wahab O, Koeffler HP, Lane AA. Sex-biased ZRSR2 mutations in myeloid malignancies impair plasmacytoid dendritic cell activation and apoptosis. Cancer Discov. 2021 Oct 6; PubMed PMID: 34615655.
c. **Taylor J**, Haddadin M, Upadhyay VA, Grussie E, Mehta-Shah N, Brunner AM, Louissaint A Jr, Lovitch SB, Dogan A, Fathi AT, Stone RM, Tallman MS, Rampal RK, Neuberg DS, Stevenson KE, Horwitz SM, Lane AA. Multicenter analysis of outcomes in blastic plasmacytoid dendritic cell neoplasm offers a pretargeted therapy benchmark. Blood. 2019 Aug 22;134(8):678-687. PubMed Central PMCID: PMC6706810.
d. **Taylor J**, Kim SS, Stevenson KE, Nori A, Kopp N, Louissaint A, Harris N, Hochberg EP, Chen Y, Lovitch SB, DeAngelo DJ, Wadleigh M, Steensma DP, Motyckova G, Stone RM, Neuberg DS, Jardin F, Piccaluga P, Weinstock DM, Lane AA. Loss-Of-Function Mutations In The Splicing Factor ZRSR2 Are Common In Blastic Plasmacytoid Dendritic Cell Neoplasm and Have Male Predominance. Blood. 2013 November 15; 122(21).

4. Therapeutic targeting of myeloid leukemias with spliceosomal mutations through modulation of splicing catalysis

A long-term goal of my laboratory is to develop targeted therapies for genetic alterations in cancer that have yet to be targeted. We have been investigating therapeutic targeting in spliceosomal mutant leukemia with a first-in-class splicing modulator, H3B-8800. This work found that both murine leukemia and human leukemia xenografts with spliceosomal mutations are more sensitive to H3B-8800, a drug that potently disrupts splicing. Since spliceosomal mutations are always heterozygous mutations, our hypothesis was that the splicing mutant cells are more reliant on the remaining normal splicing. This has now been translated into a phase 1 clinical trial.

a. Steensma DP, Wermke M, Klimek VM, Greenberg PL, Font P, Komrokji RS, Yang J, Brunner AM, Carraway HE, Ades L, Al-Kali A, Alonso-Dominguez JM, Alfonso-Piérola A, Coombs CC, Deeg HJ, Flinn I, Foran JM, Garcia-Manero G, Maris MB, McMasters M, Micol JB, De Oteyza JP, Thol F, Wang ES, Watts JM, **Taylor J**, Stone R, Gourineni V, Marino AJ, Yao H, Destenaves B, Yuan X, Yu K, Dar S, Ohanjanian L, Kuida K, Xiao J, Scholz C, Gualberto A, Platzbecker U. Phase I First-in-Human Dose Escalation Study of the oral SF3B1 modulator H3B-8800 in myeloid neoplasms. Leukemia. 2021 Jun 25; PubMed PMID: 34172893.
b. Inoue D, Polaski JT, **Taylor J**, Castel P, Chen S, Kobayashi S, Hogg SJ, Hayashi Y, Pineda JMB, El Marabti E, Erickson C, Knorr K, Fukumoto M, Yamazaki H, Tanaka A, Fukui C, Lu SX, Durham BH, Liu

B, Wang E, Mehta S, Zakheim D, Garippa R, Penson A, Chew GL, McCormick F, Bradley RK, Abdel-Wahab O. Minor intron retention drives clonal hematopoietic disorders and diverse cancer predisposition. Nat Genet. 2021 May;53(5):707-718. PubMed Central PMCID: PMC8177065.

c. **Taylor J**, Mi X, North K, Binder M, Penson A, Lasho T, Knorr K, Haddadin M, Liu B, Pangallo J, Benbarche S, Wiseman D, Tefferi A, Halene S, Liang Y, Patnaik MM, Bradley RK, Abdel-Wahab O. Single-cell genomics reveals the genetic and molecular bases for escape from mutational epistasis in myeloid neoplasms. Blood. 2020 Sep 24;136(13):1477-1486. PubMed Central PMCID: PMC7515689.

d. **Taylor J**, Lee SC. Mutations in spliceosome genes and therapeutic opportunities in myeloid malignancies. Genes Chromosomes Cancer. 2019 Dec;58(12):889-902. PubMed Central PMCID: PMC6852509.

5. Precision Hematology and other contributions.

One of my goals in scientific research is to pursue precision-based treatments for patients with hematologic malignancies. I have studied this in terms of diseases that I have a research background in: chronic lymphocytic leukemia, hairy cell leukemia and acute myeloid leukemia, as well as the scientific knowledge about the shared origin of these and other cancers.

a. Soong D, Kumar P, Jatwani K, Park J, Dogan A, **Taylor J**. Hairy Cell Leukemia Masquerading as CD5+ Lymphoproliferative Disease: The Importance of *BRAF* V600E Testing in Diagnosis and Treatment. JCO Precis Oncol. 2021;5 PubMed Central PMCID: PMC8232835.

b. Aypar U, **Taylor J***, Garcia JS, Momeni-Boroujeni A, Gao Q, Baik J, Londono D, Benayed R, Sigler A, Haddadin M, Penson AV, Arcila ME, Mullaney K, Sukhadia P, Quesada AE, Roshal M, Cullen N, Lako A, Rodig SJ, Goldberg AD, Zhang Y, Xiao W, Ho C. P2RY8-CRLF2Fusion-Positive Acute Myeloid Leukemia With Myelodysplasia-Related Changes: Response to Novel Therapy. JCO Precis Oncol. 2020;4:152-160. PubMed Central PMCID: PMC7213523. ***co-first author**

c. Intlekofer AM, Shih AH, Wang B, Nazir A, Rustenburg AS, Albanese SK, Patel M, Famulare C, Correa FM, Takemoto N, Durani V, Liu H, **Taylor J**, Farnoud N, Papaemmanuil E, Cross JR, Tallman MS, Arcila ME, Roshal M, Petsko GA, Wu B, Choe S, Konteatis ZD, Biller SA, Chodera JD, Thompson CB, Levine RL, Stein EM. Acquired resistance to IDH inhibition through trans or cis dimer-interface mutations. Nature. 2018 Jul;559(7712):125-129. PubMed Central PMCID: PMC6121718.

d. **Taylor J**, Xiao W, Abdel-Wahab O. Diagnosis and classification of hematologic malignancies on the basis of genetics. Blood. 2017 Jul 27;130(4):410-423. PubMed Central PMCID: PMC5533199.

Complete List of Published Work in My Bibliography:
https://www.ncbi.nlm.nih.gov/myncbi/justin.taylor.1/bibliography/public/