

## Curriculum Vitae

**Name:** Jennifer Jean Trowbridge, PhD

**Office Address:** The Jackson Laboratory  
600 Main Street, Bar Harbor, ME 04609

### **Education:**

1998-2002 B.Sc. The University of Western Ontario (Genetics)  
2002-2006 Ph.D. The University of Western Ontario (Microbiology and Immunology)

### **Postdoctoral Training:**

2006-2012 Postdoctoral Fellow (Hematology/Oncology) Dana-Farber Cancer Institute and Children's Hospital Boston

### **Academic Appointments:**

2011-2012 Instructor in Pediatrics, Harvard Medical School  
2012- Assistant Professor, The Jackson Laboratory  
2012- Adjunct Faculty, University of Maine  
2012- Adjunct Faculty, Tufts University School of Medicine

### **Awards and Honors:**

2002-2003 Ontario Graduate Society Studentship  
2005-2007 National Cancer Institute of Canada Research Studentship  
2006-2007 Poland Award (University of Western Ontario)  
2007 Canadian Institutes of Health Research Postdoctoral Fellowship (declined)  
2007-2010 Leukemia & Lymphoma Society Postdoctoral Fellowship  
2011-2013 American Society of Hematology Scholar Award  
2013-2017 The Ellison Medical Foundation New Scholar in Aging  
2016-present The V Foundation for Cancer Research V Scholar Award

### **Professional Memberships:**

2004-present Member, International Society for Stem Cell Research (ISSCR)  
2007-present Member, American Society of Hematology (ASH)  
2014-present Member, American Association for Cancer Research (AACR)

### **Research Support (Current):**

V2016-005 JJT-01, V Foundation for Cancer Research 11/01/16-10/31/18  
Trowbridge (PI)  
Modeling epigenome evolution from DNMT3A mutation to the development of acute myeloid leukemia (AML)  
\$100,000 (Annual direct costs)

TJL-CANCER-PILOT-TROWBRIDGE 03/01/17-02/28/18  
Trowbridge (PI)  
Development and validation of a novel, inducible mouse model of the human acute myeloid leukemia (AML) FLT3-ITD driver mutation

\$68,720 (Annual direct costs)

1 R56 DK112947-01A1, NIH 09/15/17-08/31/18  
Trowbridge (PI)  
Aging-induced alterations in the microenvironment as drivers of myeloid lineage skewing  
\$85,714 (Annual direct costs)

**Research Support (Pending):**

R01 DK118072, NIH 07/01/18-06/30/23  
Trowbridge (PI)  
Developing effective approaches to extend hematopoietic healthspan by targeting cell-extrinsic and cell-intrinsic alterations at middle age

American Cancer Society (ACS) Scholar Award 07/01/18-06/30/22  
Trowbridge (PI)  
Determining risk of acute myeloid leukemia from DNMT3A mutant stem cells

**Research Support (Completed):**

AG-NS-0993-13, Ellison Medical Foundation 07/25/13-07/24/17  
Trowbridge (PI)  
Epigenetic Drivers of Hematopoietic Stem Cell Aging

JAX-DIF-FY15-DU-JB 09/25/14-09/24/16  
Ucar (PI), Trowbridge (Co-Investigator)  
Advancing ATAC-seq Data Generation and Analysis for Epigenetic Biomarker Discovery

R21 CA184851-01, National Cancer Institute (NCI) 05/05/14-04/30/16  
Trowbridge (PI)  
(PQB5) Epigenetic Drivers of Hematopoietic Stem Cell Transformation

TJL-PYEWACKET-FY14-JJT 09/25/14-09/24/16  
Trowbridge (PI)  
The Jackson Laboratory Pyewacket Fund for Early Career Junior Faculty

TJL-DIF-FY14-GWC 05/01/14-04/30/16  
Carter (PI), Trowbridge (Co-Investigator)  
Genetics of Molecular Epigenetics

MCF JJT-02, Maine Cancer Foundation 07/01/14-06/30/15  
Trowbridge (PI)  
Genetic and Epigenetic Drivers of MDS Progression to sAML

MCF JJT-01, Maine Cancer Foundation 07/01/13-06/30/14  
Trowbridge (PI)  
Defining Susceptibility to Transformation by Epigenetic Landscape

TJL-CCSG-Pilot-JJT01 12/01/12-12/31/14  
Trowbridge (PI)  
Identifying the Epigenetic Machinery Controlling Leukemia Stem Cells

ASH JJT-01, American Society of Hematology 07/01/12-06/30/13  
Trowbridge (PI)  
ASH Fellow Scholar Award

**Publication List:**

**Original Articles**

Shojaei F, **Trowbridge J**, Gallacher L, Yuefei L, Goodale D, Karanu F, Levac K, Bhatia M. Hierarchical and ontogenic position serve to define the molecular basis of human hematopoietic stem cell behavior. Developmental Cell 2005; **8**: 651-663.

Rosu-Myles M, Stewart E, **Trowbridge J**, Ito CY, Zandstra P, Bhatia M. A unique population of bone marrow cells migrates to skeletal muscle via hepatocyte growth factor/c-Met axis. Journal of Cell Science 2005; **118**: 4343-4352.

**Trowbridge JJ**, Xenocostas A, Moon RT, Bhatia M. Glycogen synthase kinase-3 is an in vivo regulator of hematopoietic stem cell repopulation. Nature Medicine 2006; **12**: 89-98.

**Trowbridge JJ**, Scott MP, Bhatia M. Hedgehog modulates cell cycle regulators in stem cells to control hematopoietic regeneration. Proc. Natl. Acad. Sci. 2006; **103**: 14134-14139.

**Trowbridge JJ**, Snow JW, Kim J, Orkin SH. DNA methyltransferase 1 is essential for and uniquely regulates hematopoietic stem and progenitor cells. Cell Stem Cell 2009; **5**: 442-449.

**Trowbridge JJ**, Guezguez B, Moon RT, Bhatia M. Wnt3a activates dormant c-kit- bone marrow derived cells with short-term multilineage hematopoietic reconstitution capacity. Stem Cells 2010; **28**: 1379-1389.

Snow JW, **Trowbridge JJ**, Fujiwara T, Emambokus NE, Grass JA, Orkin SH, Bresnick EH. A single cis element maintains repression of the key developmental regulator Gata2. PLoS Genetics 2010; **6**: e1001103.

Snow JW, **Trowbridge JJ**, Johnson KD, Fujiwara T, Emambokus N, Grass JA, Orkin S, Bresnick EH. Context-dependent function of “GATA switch” sites in vivo. Blood 2011; **117**: 4769-4772.

**Trowbridge JJ**, Sinha AU, Li M, Armstrong SA, Orkin SH. Haploinsufficiency of Dnmt1 impairs leukemia stem cell function through derepression of bivalent chromatin domains. Genes & Development 2012; **26**: 344-349.

Bai X\*, **Trowbridge JJ\***, Riley E, Lee J, DiBiase A, Kaartinen V, Orkin SH, Zon LI. TIF1-gamma plays an essential role in murine hematopoiesis and regulates transcriptional elongation of erythroid genes. Developmental Biology 2013; **373**: 422-430. \*Equal contribution

Xu J, Bauer DE, Kerényi MA, Vo TD, Hou S, Hsu Y-J, Yao H, **Trowbridge JJ**, Mandel G, Orkin SH. Corepressor-dependent silencing of fetal hemoglobin expression by BCL11A. Proc. Natl. Acad. Sci., 2013; **110**: 6518-6523.

George J, Uyar A, Young K, Kuffler L, Waldron-Francis K, Marquez E, Ucar D, **Trowbridge JJ**. Leukaemia cell-of-origin identified by chromatin landscape of bulk tumour cells. Nature Communications 2016; **7**: 12166. doi: 10.1038/ncomms12166.

Burberry A, Suzuki N, Wang J, Moccia R, Mordes DA, Stewart MH, Suzuki-Uematsu S, Ghosh S, Singh A, Merkle FT, Koszka K, Li Q, Zon L, Rossi DJ, **Trowbridge JJ**, Notarangelo LD, Eggen K. Loss-of-function mutations in the C9ORF72 mouse ortholog cause fatal autoimmune disease. Science Translational Medicine 2016; **8**: 347ra93. doi: 10.1126/scitranslmed.aaf6038.

Young K, Borikar S, Bell R, Kuffler L, Philip V, **Trowbridge JJ**. Progressive alterations in multipotent hematopoietic progenitors underlie lymphoid cell loss in aging. The Journal of Experimental Medicine 2016; **213**: 2259-2267.

Hsu JH, Hubbell-Engler B, Adelmant G, Huang J, Joyce CE, Vazquez F, Weir BA, Montgomery P, Tsherniak A, Giacomelli AO, Perry JA, **Trowbridge J**, Fujiwara Y, Cowley GS, Xie H, Kim W, Novina CD, Hahn WC, Marto JA, Orkin SH. Prmt1-mediated translation regulation is a crucial vulnerability of cancer. Cancer Research 2017; doi: 10.1158/0008-5472.CAN-17-0216 (Epub ahead of print).

### **Reviews, Chapters and Editorials**

**Trowbridge JJ**, Moon RT, Bhatia M. Hematopoietic stem cell biology: Too much of a Wnt thing. Nature Immunology 2006; **7**:1021-1023.

Wang J, **Trowbridge JJ**, Rao S, Orkin SH. Proteomic studies of stem cells. In D. Melton, & L. Girard (Eds.), StemBook (Internet). 2008 Cambridge, MA: Harvard Stem Cell Institute.

**Trowbridge JJ**, Orkin SH. DNA methylation in adult stem cells: new insights into self-renewal. Epigenetics 2010; **5**: 189-193.

**Trowbridge JJ**. Hematopoietic stem cells. In S. Li, N. L'Heureux, & J. Elisseeff (Eds.), Stem Cell and Tissue Engineering (pp.31-48). 2011 Singapore: World Scientific Publishing.

**Trowbridge JJ**, Orkin SH. Dnmt3a silences hematopoietic stem cell self-renewal. Nature Genetics 2011; **44**: 13-14.

Challen GA, **Trowbridge JJ**. Role of DNA methyltransferases and DNA methylation in cell fate decisions during blood cell development and leukemia. In C. Bonifer & P. Cockerill (Eds.),

Transcriptional and Epigenetic Mechanisms Regulating Normal and Aberrant Blood Cell Development. 2014 Springer Publishing.

Young K, **Trowbridge JJ**. Open chromatin profiling as a novel strategy for identifying cancer cell-of-origin. Molecular & Cellular Oncology 2016; **3**:e1236770.  
doi:10.1080/23723556.2016.1236770.

Borikar S, **Trowbridge JJ**. The Mediator of hematopoietic stem cell homeostasis. Cell Stem Cell 2016; **19**:677-678.

**Patents:**

Moon RT, Bhatia M, **Trowbridge JJ**, inventors; Methods for regulation of stem cells. US Patent 11/026399

**Invited Lectures and Service:**

**2012:** Lecture: Department of Molecular & Biomedical Sciences, University of Maine, Study Section: American Society of Hematology Scholar Award

**2013:** Study Section: American Society of Hematology Scholar Award

**2014:** Speaker: Panel Discussion for Trainees, MIT; Lecture: Graduate Program in Genetics, Tufts University School of Medicine; Lecture: 41<sup>st</sup> Annual Maine Biological and Medical Sciences Symposium; Invited Speaker: The Jackson Laboratory for Genomic Medicine Grand Opening Scientific Symposium

**2015:** Invited Speaker: Red Cells Gordon Research Conference, Holderness, NH; Invited Speaker: 24<sup>th</sup> Annual Short Course on Experimental Models of Human Cancer, The Jackson Laboratory; Study Section: American Society of Hematology Scholar Award; NIH Study Section: Molecular and Cellular Hematology (MCH), ad-hoc

**2016:** Invited Speaker: 25<sup>th</sup> Annual Short Course on Experimental Models of Human Cancer (JAX); Study Section: American Society of Hematology Scholar Award; Invited Speaker: American Society of Hematology Annual Meeting; Invited Speaker: Albert Einstein College of Medicine Stem Cell Institute Seminar Series; Invited Speaker: 21<sup>st</sup> Century Mouse Genetics (JAX)

**2017:** Invited Speaker: 46<sup>th</sup> Annual International Society for Experimental Hematology Meeting; Invited Speaker: 26<sup>th</sup> Annual Short Course on Experimental Models of Human Cancer (JAX), Invited Speaker: University of Colorado Cancer Center Grand Rounds, Invited Speaker: 21<sup>st</sup> Century Mouse Genetics (JAX)

**Trainees (current):**

**Postdoctoral (1):**

2014-current Kira Young

NIH funded: T32-HD007065

**PhD students (1):**

2015-current Eraj Khokhar

University of Maine GSBSE

**Trainees (former):**

**PhD students (1):**

2013-2017 Sneha Borikar

current: research scientist, Novartis

**JAX summer student program (4):**

2017	Teniola Idowu	current: undergraduate, Penn State
2016	Zollie Yavarow	current: PhD candidate, Duke
2015	Matthew Loberg	current: research assistant, JAX
2013	Jennifer Ditano	current: PhD candidate, Dartmouth

**Thesis Advisory Committees:**

2015-current	Alexander Fine	Tufts University (committee chair)
2016-current	Qiming Wang	Tufts University
2016-current	Kate Foley	Tufts University
2016-2017	Nicholas Cutter	University of Maine GSBSE