

BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2. □ Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME Robert Bleloch	POSITION TITLE Associate Professor		
eRA COMMONS USER NAME Bleloch			
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
Duke University, Durham, North Carolina	B.S.	5/1989	Zoology
Duke University, Durham, North Carolina	M.A.T.	5/1990	Biology
University of Wisconsin, Madison, Wisconsin	Ph.D.	5/1999	Cell & Molec Biology
University of Wisconsin, Madison, Wisconsin	M.D.	5/2001	Medicine

Professional Experience:

7/01 – 7/04 Resident, Pathology, Brigham and Women's Hospital
3/03 – 7/03 Chief Resident, Pathology, Brigham and Women's Hospital
7/04 – 7/05 Clinical Fellow, Harvard Medical School Joint Program of Transfusion Medicine
8/02 – 12/05 Post-Doctoral Fellow, Whitehead Institute of Biomedical Research
12/05 – 7/10 Assistant Professor, Institute for Regenerative Medicine and Comprehensive Cancer Center, Departments of Urology and Pathology, University of California, San Francisco
7/10 – present Associate Professor. UCSF
7/10 – present Chair, UCSF Biomedical Sciences Graduate Program Admissions Committee
1/10 – present Director, UCSF Induced Pluripotency Stem Cell Core

Research Experience:

1988-1989 Undergraduate thesis, laboratory of Dr. Andrew Balber, Duke University. Purification of a endocytotic proteins in *Trypanosoma burcei*.
1991-1992 Research Assistant, laboratory of Dr. Jean-Michel Vos, University of North Carolina-Chapel Hill. Replication timing of the rRNA genes in normal versus transformed cells.
1992 Summer Research Assistant, laboratory of Dr. Howard Temin, University of Wisconsin-Madison. RNA structure/ function of the encapsidation sequence of avian retroviruses.
1994-1995 Research Assistant, laboratory of Dr. Catherin Reznikoff, University of Wisconsin-Madison. Role of p53 mutations in bladder cancer pathogenesis.
1995-1999 Graduate Student, laboratory of Dr. Judith Kimble, University of Wisconsin-Madison. Somatic gonadogenesis in *C. elegans*.
2002-2005 Post-Doctoral Fellow, laboratory of Dr. Rudolf Jaenisch, Whitehead Institute of Biomedical Research. Epigenetics of development and disease.
2006-present Faculty, University of California San Francisco. Epigenetic regulation of stem cells and cancer.

Honors:

1989 Graduated Magna Cum Laude, Duke University
2000-2001 Rath Wisconsin Distinguished Graduate Fellow
2001 GATE Pharmaceuticals Outstanding Medical Student Award
2001 Alpha Omega Alpha (Medical Student Honor Society)
2001 University of Wisconsin-Madison Commencement Student Speaker
2004 Paul E. Strandjord Young Investigator Award with Distinction
2006- Peter Carroll Endowed Chair
2007-2011 Pew Scholar
2009 Kavli Fellow (National Academy of Sciences)
2011 International Society of Stem Cell Research Outstanding Young Investigator Award.
2011 Faculty of 1000

Grant Review Panels: NIH NCF and CG study sections (ad hoc), NIH special emphasis panels (3), NSF, and 3 additional agencies

Reviewer for Journals: Nature, Science, Science, Nature Biotechnology, Cell Stem Cell, Nature Genetics, PNAS, EMBO, Genome Biology, PLOS Genetics, Molecular Systems Biology, RNA, Current Biology, Stem Cells, EMBO, Nature Protocols, and others.

Invited Speaker: Gordon Conferences (3), Keystone Meetings (3), International Society of Stem Cell Research (4), American Association of Cancer Research (1), Cold Spring Harbor Conferences (1) and many others.

Publications:

1. Reznikoff C, Belair C, Yeager T, Savelieva L, **Blelloch R**, Pathenveettil J, Cuthill S. A molecular genetic model of human bladder cancer pathogenesis. **Seminars in Oncology** 1996;23:571-584.
2. Belair CD, **Blelloch R**, Reznikoff CA. Immortalization of human uroepithelial cells by human papillomavirus 16 E6 or E7. **Radiation Oncology Investigations** 1996;3:368-376.
3. Roehl H, Bosenberg M, **Blelloch R**, Kimble J. Roles of the RAM and ANK domains in signaling by the *C. elegans* GLP1 receptor. **EMBO J** 1996;15:7002-7112.
4. **Blelloch R**, Newman C, Kimble J. Controls of cell migration during *C. elegans* development. **Current Opin Cell Biol** 1999;11:608-613.
5. **Blelloch R**, Santa Anna-Arriola S, Li Y, Gao D, Hodgkin J, Kimble J. Control of gonadal morphogenesis by the *gon-1* gene in *C. elegans*. **Dev Biol** 1999;216:382-393.
6. **Blelloch R**, Kimble J. Control of organ shape by a secreted metalloprotease in the nematode *Caenorhabditis elegans*. **Nature** 1999;399:586-590.
7. Mathies LD, Schvarzstein M, **Blelloch R**, Spence AM, Kimble J. *tra-1*/GLI controls development of somatic gonadal precursors in *C. elegans*. **Development** 2004; 131: 4333-4343.
8. **Blelloch R***, Hochedlinger K*, Yamado Y., Brennan C., Mintz B., Chin L., Jaenisch R. Nuclear Cloning of Embryonal Carcinoma Cells. **PNAS** 2004;101: 13985-90.
9. Hochedlinger K*, **Blelloch R***, Brennan C., Yamado Y., Kim, M., Chin L., Jaenisch R. Reprogramming of a Melanoma Genome by Nuclear Transplantation. **Genes and Development** 2004; 18: 1875-1885. *Authors Contributed Equally
10. Jaenisch R, Hochedlinger K, **Blelloch R**, Yamada Y, Baldwin K, Eggan K. Nuclear cloning, epigenetic reprogramming, and cellular differentiation. **Cold Spring Harb Symp Quant Biol** 2004; 69:19-27.
11. **Blelloch R**, Wang Z, Meissner A, Pollard S, Smith A, Jaenisch R. Reprogramming Efficiency following Somatic Cell Nuclear Transfer is Influenced by the Differentiation and Methylation State of the Donor Nucleus. **Stem Cells**. 2006; 24: 2007-2013.
12. Wang Y, Medvid R, Melton C, Jaenisch R, **Blelloch R**. DGCR8 is Essential for MicroRNA Biogenesis and Efficient Embryonic Stem Cell Differentiation. **Nature Genetics**, 2007; 39:380-5. Epub 2007 Jan 28.
13. **Blelloch R**. Venere M, Yen J, Ramalho-Santos M. Generation of Induced Pluripotent Stem Cells in the Absence of Drug Selection, **Cell Stem Cell**, 2007; 1:245-247.
14. Babiarz J, Ruby G, Wang Y, Bartel D, **Blelloch R**. Mouse ES Cells Express Endogenous shRNAs, siRNAs, and Other Microprocessor-independent, Dicer-dependent Small RNAs. **Genes and Development**, 2008; 22:2773-85.
15. Wang Y, Baskerville S, Shenoy A, Babiarz JE, Baehner L, **Blelloch R**. Embryonic Stem Cell Specific MicroRNAs Regulate the G1/S Transition and Promote Rapid Proliferation. **Nature Genetics**, 2008; 40:1478-83. Epub Nov 2. 2008
16. Chaivorapol C, Melton C, Wei G, Yeh RF, Ramalho-Santos M, **Blelloch R**, Li H. CompMoby: Comparative MobyDick for detection of cis-regulatory motifs. **BMC Bioinformatics**, 2008; 9:455.
17. **Blelloch R**. Regenerative medicine: short cut to cell replacement. **Nature**. 2008, 455:604-5.
18. Han J, Pedersen JS, Kwon SC, Belair CD, Kim YK, Yeom KH, Yang WY, Haussler D, **Blelloch R**, Kim VN. Posttranscriptional Crossregulation between Drosha and DGCR8. **Cell**, 2009. 136:75–84.
19. Judson RL, Babiarz JE, Venere M, **Blelloch R**. Embryonic stem cell-specific microRNAs promote induced pluripotency. **Nature Biotechnology**, 2009; 27:459-61 Epub April, 12, 2009.
20. Babiarz J and Blelloch R. Small RNAs – their biogenesis, regulation and function in embryonic stem cells. **Stembook**. 2009. The Stem Cell Research Community, <http://www.stembook.org>.
21. Wang Y, **Blelloch R**. Cell cycle regulation by microRNAs in embryonic stem cells. **Cancer Research**, 2009. 69:4093-6. Epub May, 12, 2009.
22. Subramanyam D, Blelloch R. Watching reprogramming in real time. *Nat Biotechnol*. 2009

23. Rao PK, Toyama Y, Chiang HR, Gupta S, Bauer M, Medvid R, Reinhardt F, Liao R, Krieger M, Jaenisch R, Lodish HF, **Blelloch R**. Loss of cardiac microRNA-regulation leads to dilated cardiomyopathy and heart failure. **Circulation Research**, 2009, 105: 585-94. Epub Aug 13, 2009.
24. Shenoy A, **Blelloch R**. Genomic analysis suggests that mRNA destabilization by the Microprocessor is specialized for the auto-regulation of Dgcr8. **PlosONE**. 2009. 4: e6971.
25. Melton C, Judson R, **Blelloch R**. Opposing microRNA families regulate self-renewal in mouse embryonic stem cells. **Nature**, 2010, 463: 621-6. Epub 2010 Jan 6
26. Suh N, Baehner L, Moltzhan F, Melton C, Shenoy A, Chen, **Blelloch R**. MicroRNA function is globally suppressed in mouse oocytes and early embryos. **Current Biology**, 2010, 20: 271-277. Epub 2010 Jan 28.
27. Chiang HR, Schoenfeld LW, Ruby JG, Auyeung VC, Spies N, Baek D, Johnston WK, Russ C, Luo S, Babiarz JE, **Blelloch R**, Schroth GP, Nusbaum C, Bartel DP. Mammalian microRNAs: experimental evaluation of novel and previously annotated genes. *Genes Dev.* 2010;24:992-1009. Epub Apr 22.
28. Song G, Sharma AD, Roll GR, Ng R, Lee AY, Blelloch RH, Frandsen NM, Willenbring H. MicroRNAs control hepatocyte proliferation during liver regeneration. **Hepatology**. 2010; 51:1735-43.
29. Bezman NA, Cedars E, Steiner DF, Blelloch R, Hesslein DG, Lanier LL. Distinct requirements of microRNAs in NK cell activation, survival, and function. **J Immunol**. 2010;185:3835-46. Epub 2010 Aug 30.
30. Subramanyam D, Belair CD, Barry-Holson KQ, Lin H, Kogan SC, Passegue, E, **Blelloch R**. PML-RAR α and Dnmt3a1 cooperate *in vivo* to promote acute promyelocytic leukemia. **Cancer Res**. 2010, 70: 8792-801. Epub 2010 Sep 21
31. Swarbrick A, Woods SL, Shaw A, Balakrishnan A, Phua Y, Nguyen A, Chanthery Y, Lim L, Ashton LJ, Judson RL, Huskey N, **Blelloch R**, Haber M, Norris MD, Lengyel P, Hackett CS, Preiss T, Chetcuti A, Sullivan CS, Marcusson EG, Weiss W, L'Etoile N, Goga A. miR-380-5p represses p53 to control cellular survival and is associated with poor outcome in MYCN-amplified neuroblastoma. **Nat Med**. 2010;16:1134-40. Epub 2010 Sep 26.
32. Moltzahn F, Olshen AB, Baehner L, Peek A, Fong L, Stöppler H, Simko J, Hilton JF, Carroll P, **Blelloch R**. Microfluidic-based multiplex qRT-PCR identifies diagnostic and prognostic microRNA signatures in the sera of prostate cancer patients. **Cancer Res**. 2011, 71:550-60. Epub 2010 Nov 22
33. Melton C, **Blelloch R**. MicroRNA Regulation of Embryonic Stem Cell Self-Renewal and Differentiation. **Adv Exp Med Biol**. 2010;695:105-17.
34. Chen J, Melton C, Suh N, Oh JS, Horner K, Xie F, Sette C, **Blelloch R**, Conti M. Genome-wide analysis of translation reveals a critical role for deleted in azzospermia-like (Sazl) at the oocyte-to-zygote transition. **Genes and Development**. 2011. 25:755-66.
35. Schofield CM, Hsu R, Barker AJ, Gertz CC, **Blelloch R**, Ullian EM. Monoallelic deletion of the microRNA biogenesis gene Dgcr8 produces deficits in the development of excitatory synaptic transmission in the prefrontal cortex. **Neural Development**. 2011. 6:11.
36. Suh N, **Blelloch R**. Small RNAs in early development: from gametes to gastrulation. **Development**. 2011. 138: 1653-61.
37. Subramanyam D, Lamouille S, Judson RL, Liu JY, Bucay N, Derynck R, **Blelloch R**. Multiple targets of miR-302 and miR-372 promote human induced pluripotency. **Nature Biotechnology**. 2011. 29:443-8. Epub 2011 Apr 13.
38. Wang Y, **Blelloch R**. Cell cycle regulation by microRNAs in stem cells. *Results Probl Cell Differ.* 2011;53:459-72.
39. Subramanyam D, **Blelloch R**. From microRNAs to targets: pathway discovery in cell fate transitions. **Current Opinion in Genetics and Development**. 2011. May 31. [Epub ahead of print]
40. Babiarz JE, Hsu R, Melton C, Thomas M, Ullian EM, **Blelloch R**. A role for non-canonical microRNAs in the mammalian brain revealed by phenotypic differences in Dgcr8 versus Dicer1 knockouts and small RNA sequencing. **RNA**. 2011 Jun 28. [Epub ahead of print]
41. Steiner DF, Thomas MF, Hu JK, Yang Z, Babiarz JE, Allen CD, Matloubian M, Blelloch R, Ansel KM. MicroRNA-29 regulates T-box transcription factors and interferon- γ production in helper T cells. *Immunity*. 2011 Aug 26;35(2):169-81. Epub 2011 Aug 4.
42. Moltzahn F, Hunkapiller N, Mir AA, Imbar T, Blelloch R. High throughput microRNA profiling: optimized multiplex qRT-PCR at nanoliter scale on the fluidigm dynamic arrayTM IFCs. *J Vis Exp*. 2011 Aug

3;(54). pii: 2552.

43. Chapnik E, Sasson V, Blelloch R, Hornstein E. Dgcr8 controls neural crest cells survival in cardiovascular development. *Dev Biol.* 2012 Feb 1;362(1):50-6.
44. Shenoy A, Blelloch R. microRNA induced transdifferentiation. *F1000 Biol Rep.* 2012;4:3. Epub 2012 Feb 1.