

# AMY E. CAMPBELL, Ph.D.

## *Curriculum vitae*

### CONTACT

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### SUMMARY

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Molecular biologist with 13 years of experience studying gene regulation during normal development and disease, with specialized knowledge of transcription, chromatin, epigenetics, hematopoiesis, myogenesis, and muscular dystrophy.

### EDUCATION

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**University of Pennsylvania**, Philadelphia, PA 2013  
Ph.D., Cell and Molecular Biology - Genetics and Gene Regulation

**Reed College**, Portland, OR 2007  
B.A., Biology

### RESEARCH EXPERIENCE

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**Research Instructor**, University of Colorado Anschutz Medical Campus, Aurora, CO 2019 - present  
Lab of Sujatha Jagannathan, Ph.D.

**Staff Scientist**, Fred Hutchinson Cancer Research Center, Seattle, WA 2017 - 2019  
Lab of Stephen J. Tapscott, M.D., Ph.D.

**Postdoctoral Research Fellow**, Fred Hutchinson Cancer Research Center, Seattle, WA 2013 - 2017  
Lab of Stephen J. Tapscott, M.D., Ph.D.

**Predoctoral Research Fellow**, The Children's Hospital of Philadelphia, Philadelphia, PA 2009 - 2013  
Lab of Gerd A. Blobel, M.D., Ph.D.

**Research Specialist**, University of California, San Francisco, San Francisco, CA 2007 - 2008  
Lab of JJ Miranda, Ph.D.

**Undergraduate Research Fellow**, Reed College, Portland, OR 2005 - 2007  
Lab of Peter J. Russell, Ph.D.

**Summer Undergraduate Research Fellow**, New York University, New York, NY 2006  
Lab of Robert J. Schneider, Ph.D.

### PUBLICATIONS

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Chew GL\*, **Campbell AE\***, De Neef E, Sutliff NA, Shadle SC, Tapscott SJ, Bradley RK. (2019) DUX4 suppresses MHC class I to promote cancer immune evasion and resistance to checkpoint blockade. *Dev Cell*. Jul 17. [Epub ahead of print] doi: 10.1016/j.devcel.2019.06.011. \*equal contribution

Oliva J, Galasinski S, Richey A, **Campbell AE**, Meyers MJ, Modi N, Zhong JW, Tawil R, Tapscott SJ, Sverdrup FM. (2019) Clinically advanced p38 inhibitors suppress DUX4 expression in cellular and animal models of facioscapulohumeral muscular dystrophy. *J Pharmacol Exp Ther*. 370(2):219-230. doi: 10.1124/jpet.119.259663.

Wang LH, Friedman SD, Shaw D, Snider L, Wong CJ, Budech CB, Poliachik SL, Gove NE, Lewis LM, **Campbell AE**, Lemmers RJFL, Maarel SM, Tapscott SJ, Tawil RN. (2019) MRI-informed muscle biopsies correlate MRI with pathology and DUX4 target gene expression in FSHD. *Hum Mol Genet*. 28(3):476-486. doi: 10.1093/hmg/ddy364.

**Campbell AE**, Belleville AE, Resnick R, Shadle SC, Tapscott SJ. (2018) Facioscapulohumeral dystrophy: activating an early embryonic transcriptional program in human skeletal muscle. *Hum Mol Genet*. 27(R2):R153-R162. doi: 10.1093/hmg/ddy162.

Wai DCC, Szyszka TN, **Campbell AE**, Kwong C, Wilkinson-White LE, Silva APG, Low JKK, Kwan AH, Gamsjaeger R, Chalmers JD, Patrick WM, Lu B, Vakoc CR, Blobel GA, Mackay JP. (2018) The BRD3 ET domain recognizes a short peptide motif through a mechanism that is conserved across chromatin remodelers and transcriptional regulators. *J Biol Chem*. 293(19):7160-7175. doi: 10.1074/jbc.RA117.000678.

**Campbell AE**, Shadle SC, Jagannathan S, Lim JW, Resnick R, Tawil R, van der Maarel SM, Tapscott SJ. (2018) NuRD and CAF-1-mediated silencing of the D4Z4 array is modulated by DUX4-induced MBD3L proteins. *eLife*. 7:e31023. doi: 10.7554/eLife.31023.

**Campbell AE**, Oliva J, Yates MP, Zhong JW, Shadle SC, Snider L, Singh N, Tai S, Hiramuki Y, Tawil R, van der Maarel SM, Tapscott SJ, Sverdrup FM. (2017) BET bromodomain inhibitors and agonists of the beta-2 adrenergic receptor identified in screens for compounds that inhibit DUX4 expression in FSHD muscle cells. *Skelet Muscle*. 7(1):16. doi: 10.1186/s13395-017-0134-x.

Shadle SC, Zhong JW, **Campbell AE**, Conerly ML, Jagannathan S, Wong CJ, Morello TD, van der Maarel SM, Tapscott SJ. (2017) DUX4-induced dsRNA and MYC mRNA stabilization activate apoptotic pathways in human cell models of facioscapulohumeral dystrophy. *PLoS Genet*. 13(3):e1006658. doi: 10.1371/journal.pgen.1006658.

Stonestrom AJ, Hsu SC, Jahn KS, Huang P, Keller CA, Giardine BM, Kadauke S, **Campbell AE**, Evans P, Hardison RC, Blobel GA. (2015) Functions of BET proteins in erythroid gene expression. *Blood*. 125(18):2825-2834. doi: 10.1182/blood-2014-10-607309.

Byrska-Bishop M, VanDorn D, **Campbell AE**, Betensky M, Arca PR, Yao Y, Gadue P, Costa FF, Nemiroff RL, Blobel GA, French DL, Hardison RC, Weiss MJ, Chou ST. (2015) Pluripotent stem cells reveal erythroid-specific activities of the GATA1 N-terminus. *J Clin Invest*. 125(3):993-1005. doi: 10.1172/JCI75714.

**Campbell AE\***, Hsiung CC\*, Blobel GA. (2014) Comparative analysis of mitosis-specific antibodies for bulk purification of mitotic populations by fluorescence-activated cell sorting. *Biotechniques* 56(2):90-94. doi: 10.2144/000114137. \*equal contribution

Shi J, Whyte WA, Zepeda-Mendoza CJ, Milazzo JP, Shen C, Roe JS, Minder JL, Mercan F, Wang E, Eckersley-Maslin MA, **Campbell AE**, Kawaoka S, Shareef S, Zhu Z, Kendall J, Muhar M, Haslinger C, Yu M, Roeder RG, Wigler MH, Blobel GA, Zuber J, Spector DL, Young RA, Vakoc CR. (2013) Role of SWI/SNF in acute leukemia maintenance and enhancer-mediated Myc regulation. *Genes Dev.* 27(24):2648-2662. doi: 10.1101/gad.232710.113.

**Campbell AE**, Wilkinson-White L, Mackay JP, Matthews JM, Blobel GA. (2013) Analysis of disease-causing GATA1 mutations in murine gene complementation systems. *Blood.* 121(26):5218-5227. doi: 10.1182/blood-2013-03-488080.

Lamonica JM, Deng W, Kadauke S, **Campbell AE**, Gamsjaeger R, Wang H, Cheng Y, Billin AN, Hardison RC, Mackay JP, Blobel GA. (2011) Bromodomain protein Brd3 associates with acetylated GATA1 to promote its chromatin occupancy at erythroid target genes. *Proc Natl Acad Sci USA.* 108(22):E159-168. doi: 10.1073/pnas.1102140108.

Tolstoy N\* and **Campbell AE\***. (2010) Invertebrate insights into autism. *Dis Model Mech.* 3(11-12):665-666. doi: 10.1242/dmm.005876. \*equal contribution

**Campbell AE**, Martinez SR, Miranda JJ. (2010) Molecular architecture of CTCFL. *Biochem Biophys Res Commun.* 396(3):648-650. doi: 10.1016/j.bbrc.2010.04.146.

Deng Z, **Campbell AE**, Lieberman PM. (2010) TERRA, CpG methylation and telomere heterochromatin: lessons from ICF syndrome cells. *Cell Cycle.* 9(1):69-74. doi: 10.4161/cc.9.1.10358.

## **PATENT APPLICATIONS**

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Bradley RK, Chew GL, **Campbell AE**, Tapscott SJ. Methods and compositions for treating cancer. U.S. Provisional Patent Application 62/857,632, filed June 5, 2019.

**Campbell AE**, Shadle SC, Tapscott SJ. Methods for treating facioscapulohumeral muscular dystrophy. International Patent Application PCT/US2019/016315, filed February 1, 2019.

Sverdrup FM, Tapscott SJ, Oliva J, **Campbell AE**, Meyers MJ. p38 inhibitors for the treatment of FSHD. International Patent Application PCT/US2018/061454, filed November 16, 2018.

Sverdrup FM, Tapscott SJ, Oliva J, **Campbell AE**, Meyers MJ. p38 inhibitors for modulating DUX4 expression in FSHD. U.S. Provisional Patent Application 62/726,696, filed September 4, 2018.

Bradley RK, Chew GL, **Campbell AE**, Tapscott SJ. Methods and compositions for treating cancer. U.S. Provisional Patent Application 62/771,662, filed July 30, 2018.

**Campbell AE**, Shadle SC, Tapscott SJ. Methods for treating facioscapulohumeral muscular dystrophy. U.S. Provisional Patent Application 62/625,881, filed February 2, 2018.

Sverdrup FM, Tapscott SJ, Oliva J, **Campbell AE**, Meyers MJ. p38 inhibitors for modulating DUX4 expression in FSHD. U.S. Provisional Patent Application 62/589,225, filed November 21, 2017.

## **GRANTS AND AWARDS**

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**Investigator-initiated Grant**

2018 - 2022

Friends of FSH Research / The Chris Carrino Foundation for FSHD

<b>Young Investigator Award</b> FSH Society	2018
<b>Outstanding Postdoctoral Research Fellow</b> Fred Hutchinson Cancer Research Center Trainee Appreciation Week	2016, 2017
<b>Chromosome Metabolism and Cancer Training Grant</b> National Institutes of Health / Fred Hutchinson Cancer Research Center	2015 - 2017
<b>Hematopoiesis Training Grant</b> National Institutes of Health / University of Pennsylvania	2010 - 2013
<b>Graduate and Professional Student Assembly Research Student Travel Grant</b> University of Pennsylvania	2012
<b>Poster Prize</b> University of Pennsylvania Cell and Molecular Biology Symposium	2012
<b>Abstract Achievement Award</b> American Society of Hematology	2011, 2012
<b>Phi Beta Kappa</b>	2007
<b>Miller Family Foundation Undergraduate Research Project Grant</b> Reed College	2006 - 2007
<b>Commended for excellence in scholarship</b> Reed College	2004 - 2007
<b>Sherman-Fairchild Summer Undergraduate Research Program Award</b> Reed College	2005
<b>Commended performance on junior qualifying exam</b> Reed College	2005

#### **TEACHING AND MENTORING**

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<b>Laboratory Mentor</b> , Fred Hutchinson Cancer Research Center, Seattle, WA	2013 - 2019
<b>Winter Shadows Host</b> , Fred Hutchinson Cancer Research Center, Seattle, WA	2017, 2018
<b>Lecturer</b> , Fred Hutchinson Cancer Research Center, Seattle, WA	2015
<b>Teaching Certificate Recipient</b> , University of Pennsylvania, Philadelphia, PA	2013
<b>Teaching Assistant</b> , University of Pennsylvania, Philadelphia, PA	2011, 2013
<b>Laboratory Mentor</b> , The Children's Hospital of Philadelphia, Philadelphia, PA	2009 - 2013

**Tutor**, University of Pennsylvania, Philadelphia, PA 2009, 2012

**Tutor**, Reed College, Portland, OR 2004 - 2007

### **COMMUNITY AND UNIVERSITY SERVICE**

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**Co-Chair**, Student/Postdoc Advisory Committee 2017 - 2019  
Fred Hutchinson Cancer Research Center

**Group Leader**, Mentors, Advisors & Peers Program 2016 - 2019  
Women In Bio-Seattle

**Board Member**, Student/Postdoc Advisory Committee 2014 - 2019  
Fred Hutchinson Cancer Research Center

**Volunteer Judge**, Middle School Essay Contest 2014 - 2016  
Northwest Association for Biomedical Research

**Organizer and presenter**, Human Biology Division Annual Retreat 2014  
Fred Hutchinson Cancer Research Center

**Volunteer Instructor** 2012 - 2013  
Science Education Academy, Inc.

**Volunteer Exhibitor** 2011 - 2013  
Philadelphia Science Festival

**Student Representative**, Cell and Molecular Biology Curriculum Committee 2009 - 2013  
University of Pennsylvania

**Student Representative**, Biomedical Graduate Studies Internal Review Committee 2011 - 2012  
University of Pennsylvania

**Organizer**, Genetics and Gene Regulation Preliminary Exam Practice Sessions 2011  
University of Pennsylvania

**Organizer**, Genetics and Gene Regulation Monthly Happy Hour 2010 - 2011  
University of Pennsylvania

### **PROFESSIONAL ASSOCIATIONS**

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**Women In Bio** 2015 - 2019

**National Postdoctoral Association** 2014 - 2017