BRIAN MUCHMORE

Current MD candidate at the University of Vermont's Larner College of Medicine.

🎓 EDUCATION

2002-2005

Bates College
BA in Russian Studies   📍 Lewiston, Maine

Graduated after six semesters of classes.

2004

Nevskii Institute of Language and Culture
📍 St. Petersburg, Russia

Course work in Russian language, economics and history while living with a Russian family.

2005

Odessa Language Study Center
📍 Odessa, Ukraine

The Institute is a full EAQUALS member and evaluated my Russian language level as C1.

2009-2012

University of Maryland
BSc.   📍 College Park, Maryland

Completed the core requirements of a BSc and took various science electives while working full-time at the NIH.

2018-2021

The University of Vermont's Larner College of Medicine
MD candidate.   📍 Burlington, Vermont

Worked full-time as a Bioinformatician for the first 18 months of school.

💻 RESEARCH EXPERIENCE

2009

Summer Fellowship
Laboratory of Structural Biology under Dr. Alasdair Steven
📍 National Institute of Arthritis and Musculoskeletal and Skin Diseases, NIH
- Cloned mutants of the fungal prion protein Het-s for analysis of structural motifs with electron microscopy.

2009-2012

Cancer Research Training Award Fellow
Laboratory of Translational Genomics under Dr. Ludmila Prokunina-Olsson
📍 Division of Cancer Epidemiology and Genetics, National Cancer Institute, NIH

CONTACT INFO

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📞 240-408-6061

SKILLS

10,000+ hours of laboratory bench work experience.

10,000+ hours of data science experience with working proficiency in R, Bash, and Python.

Professional proficiency using Docker and Guacamole.

Last updated on 2019-09-12.

- Functional investigation of GWAS cancer signals associated with HCV-related traits and bladder cancer.

2013-2014

Research Scientist
Bangkok Center of Excellence in Clinical Virology under Dr. Yong Poovorawan

📍 Faculty of Medicine, Chulalongkorn University

- Evolutionary analysis of SNPs and INDELs using various bioinformatics techniques and publicly available data sets such as ancient genomes and 1000 genomes data.

2015-2018

Research Scientist
Genetics of Complex Diseases Group under Dr. Marta Alarcón Riquelme

📍 Pfizer-University of Granada-Junta de Andalucía Centre for Genomics and Oncological Research (GENYO)

- Part of a multi-national and multi-institutional project led by Dr. Marta Alarcón Riquelme to find clinically useful biomarkers for systemic autoimmune diseases (www.precisesads.eu). Also one of the leads of Spain's first CyTOF/Helios core facility.

💼 PROFESSIONAL EXPERIENCE

2014-Current

Head of Reporting and Recurrent Consultant
CodoniXnotes EHR Software   📍 Codonix

- Data mining of Codonix's terabyte-plus of patient data.
- Implemented a sophisticated real-time reporting solution using Docker and R (Shiny).
- Created a combined Guacamole-Docker application to serve Codonix's Java applet over HTML5.

📄 PUBLICATIONS

2010

From noncoding variant to phenotype via SORT1 at the 1p13 cholesterol locus.
Nature.

Musunuru K, Strong A, Frank-Kamenetsky M, Lee NE, Ahfeldt T, Sachs KV, Li X, Li H, Kuperwasser N, Ruda VM, Pirruccello JP, **Muchmore B**, Prokunina-Olsson L, Hall JL, Schadt EE, Morales CR, Lund-Katz S, Phillips MC, Wong J, Cantley W, Racie T, Ejebe KG, Orho-Melander M, Melander O, Koteliansky V, Fitzgerald K, Krauss RM, Cowan CA, Kathiresan S and Rader DJ.

2011

IL28B rs12979860 genotype and spontaneous clearance of hepatitis C virus in a multi-ethnic cohort of injection drug users: evidence for a supra-additive association.
J. Infect. Dis.

F. M. Shebl, R. M. Pfeiffer, D. Buckett, **B. Muchmore**, S. Chen, M. Dotrang, L. Prokunina-Olsson, B. R. Edlin and T. R. O'Brien.

2012

Common genetic variants in the PSCA gene influence gene expression and bladder cancer risk.
Proc. Natl. Acad. Sci. U.S.A.

Y. P. Fu, I. Kohaar, N. Rothman, J. Earl, J. D. Figueroa, Y. Ye, N. Malats, W. Tang, L. Liu, M. Garcia-Closas, **B. Muchmore**, N. Chatterjee, M. Tarway, M. Kogevinas, P. Porter-Gill, D. Baris, A. Mumy, D. Albanes, M. P. Purdue, A. Hutchinson, A. Carrato, A. Tardon, C. Serra, R. Garcia-Closas, J. Lloreta, A. Johnson, M. Schwenn, M. R. Karagas, A. Schned, W. R. Diver, S. M. Gapstur, M. J. Thun, J. Virtamo, S. J. Chanock, J. F. Fraumeni, D. T. Silverman, X. Wu, F. X. Real and L. Prokunina-Olsson.

2012 ● **IL-29 is the dominant type III interferon produced by hepatocytes during acute hepatitis C virus infection.**
Hepatology.
H. Park, E. Serti, O. Eke, **B. Muchmore**, L. Prokunina-Olsson, S. Capone, A. Folgori and B. Rehermann.

2013 ● **A variant upstream of IFNL3 (IL28B) creating a new interferon gene IFNL4 is associated with impaired clearance of hepatitis C virus.**
Nat. Genet.
L. Prokunina-Olsson, **B. Muchmore**, W. Tang, R. M. Pfeiffer, H. Park, H. Dickensheets, D. Hergott, P. Porter-Gill, A. Mumy, I. Kohaar, S. Chen, N. Brand, M. Tarway, L. Liu, F. Sheikh, J. Astemborski, H. L. Bonkovsky, B. R. Edlin, C. D. Howell, T. R. Morgan, D. L. Thomas, B. Rehermann, R. P. Donnelly and T. R. O'Brien.

2014 ● **The 19q12 bladder cancer GWAS signal: association with cyclin E function and aggressive disease.**
Cancer Res.
Y. P. Fu, I. Kohaar, L. E. Moore, P. Lenz, J. D. Figueroa, W. Tang, P. Porter-Gill, N. Chatterjee, A. Scott-Johnson, M. Garcia-Closas, **B. Muchmore**, D. Baris, A. Paquin, K. Ylaya, M. Schwenn, A. B. Apolo, M. R. Karagas, M. Tarway, A. Johnson, A. Mumy, A. Schned, L. Guedez, M. A. Jones, M. Kida, G. M. Hosain, N. Malats, M. Kogevinas, A. Tardon, C. Serra, A. Carrato, R. Garcia-Closas, J. Lloreta, X. Wu, M. Purdue, G. L. Andriole, R. L. Grubb, A. Black, M. T. Landi, N. E. Caporaso, P. Vineis, A. Siddiq, H. B. Bueno-de-Mesquita, D. Trichopoulos, B. Ljungberg, G. Severi, E. Weiderpass, V. Krogh, M. Dorronsoro, R. C. Travis, A. Tj? nneland, P. Brennan, J. Chang-Claude, E. Riboli, J. Prescott, C. Chen, I. De Vivo, E. Govannucci, D. Hunter, P. Kraft, S. Lindstrom, S. M. Gapstur, E. J. Jacobs, W. R. Diver, D. Albanes, S. J. Weinstein, J. Virtamo, C. Kooperberg, C. Hohensee, R. J. Rodabough, V. K. Cortessis, D. V. Conti, M. Gago-Dominguez, M. C. Stern, M. C. Pike, D. Van Den Berg, J. M. Yuan, C. A. Haiman, O. Cussenot, G. Cancel-Tassin, M. Roupret, E. Comperat, S. Porru, A. Carta, S. Pavanello, C. Arici, G. Mastrangelo, H. B. Grossman, Z. Wang, X. Deng, C. C. Chung, A. Hutchinson, L. Burdette, W. Wheeler, J. Fraumeni, S. J. Chanock, S. M. Hewitt, D. T. Silverman, N. Rothman and L. Prokunina-Olsson.

2017 ● **CymeR: cytometry analysis using KNIME, docker and R.**
Bioinformatics.
B. Muchmore and M. E. Alarcon-Riquelme.

2019 ● **The IFN-λ4 Conundrum: When a Good Interferon Goes Bad.**
J. Interferon Cytokine Res.
O. O. Onabajo, **B. Muchmore** and L. Prokunina-Olsson.

♛ AWARDS

2012 ● **Patent**
Novel Interferon-Lambda 4 (IFNL4) Protein, Related Nucleic Acid Molecules, and Uses Thereof.

📍 United States Government

Ludmila Prokunina-Olsson, Thomas R. O'Brien, **Brian Muchmore** and Raymond P. Donnelly.

2012 ● **License**
Technology E-217-2011/1 titled "Identification of a Novel Interferon-Analog (IFNAN) Human Protein That Impairs Spontaneous and Treatment-Induced Clearance of Hepatitis C Virus in Humans"

📍 United States Government

Ludmila Prokunina-Olsson, Thomas R. O'Brien, **Brian Muchmore** and Raymond P. Donnelly.