Muchmore, Brian Padfield
AAMC ID: 13282994

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Permanent Mailing Address

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Medical Education

Robert Larner, M.D., College of Medicine at the University of Vermont, United States of America

08/2017 - 05/2021

M.D., 05/2021

Education

Undergraduate - University of Maryland, College Park, MD

Pre-medicine

09/2009 - 09/2012

Undergraduate - Bates College, Lewiston, ME

Russian Language and Literature (graduated after six semesters of classes)

08/2002 - 06/2006

B.A.; 06/2006

Medical School Awards

Jerold and Ingela Lucey Early Career Investigator Prize for Innovations in Infant or Child Health, 05/13/2020 - Pediatrics Grand Rounds, Pediatrics Department

Certification/Licensure

BLS Certified, 10/31/2020

Volunteer Experience

08/2012 - 08/2016

Special Love, Front Royal, VA, United States of America

Camp Counselor, Dave Smith

Volunteer at a sleep-away camp for children with cancer, which is sponsored by the NIH and run by the organization Special Love.

Work Experience

01/2016 - 01/2021   **Average Hours/Week:** 50

Codonix Electronic Medical Records, Rockville, MD, United States of America

Head of Reporting & Data Science, Dr. Andrew Muchmore

Real-time reporting and data mining of Codonix's terabyte-plus of patient data.

Current/Prior Training

None

Research Experience

05/2018 - 05/2018   **Average Hours/Week:** 40

Stanford University, Palo Alto, CA, United States of America

CyTOF/CODEX Course Attendee, Dr. Garry Nolan

Was a participant in the 2018 CyTOF/CODEX mini-course held by the Nolan laboratory at Stanford University in order to help set-up Spain's first CyTOF/Helios core facility. Airfare, accommodation and training fees were provided by the PRECISESADS project.

01/2015 - 01/2019   **Average Hours/Week:** 50

Pfizer-University of Granada-Junta de Andalucía, Spain

Research Fellow, Dr. Marta Alarcón-Riquelme

Lead bioinformatician for the PRECISESADS Flow Cytometry Study Group, which was a subgroup of a multi-national and multi-institutional project to find clinically useful biomarkers for systemic autoimmune diseases. Also, lead bioinformatician and co-laboratory leader of Spain's first CyTOF/Helios core facility.

01/2013 - 01/2014   **Average Hours/Week:** 50

Chulalongkorn University, Thailand

Research Fellow, Dr. Yong Poovorawan

Evolutionary analysis of SNPs and INDELs using ancient genomes and 1000 genomes data.

09/2009 - 09/2012   **Average Hours/Week:** 50

National Institutes of Health, Bethesda, MD, United States of America

Cancer Research Training Award Fellow, Dr. Ludmila Prokunina-Olsson

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

05/2009 - 09/2009   **Average Hours/Week:** 50

National Institutes of Health, Bethesda, MD, United States of America

Research Internship, Dr. Alasdair Steven

Cloned mutants of the fungal prion protein Het-s for analysis of structural motifs with electron microscopy.

Publications

Peer Reviewed Journal Articles/Abstracts

Beretta, L., Barturen, G., Vigone, B., Bellocchi, C., Hunzelmann, N., De Langhe, E., Cervera, R., Gerosa, M., Kovács, L., Ortega Castro, R., Almeida, I., Cornec, D., Chizzolini, C., Pers, J. O., Makowska, Z., Lesche, R, … PRECISESADS Flow Cytometry study. Genome-wide whole blood transcriptome profiling in a large European cohort of systemic sclerosis patients. Annals of the Rheumatic Diseases. 2020, Jun; 79(9): 1218-1226. Cited in PubMed; PMID: 32561607. Pub Status: Published.

Bossini-Castillo, L., Villanueva-Martin, G., Kerick, M., Acosta-Herrera, M., López-Isac, E., Simeón, C. P., Ortego-Centeno, N., Assassi, S., International SSc Group, Australian Scleroderma Interest Group (ASIG), … PRECISESADS collaborator group. Genomic Risk Score impact on susceptibility to systemic sclerosis. Annals of the rheumatic diseases. 2020, Oct; 79(12): 218558. Cited in PubMed; PMID: 33004331. Pub Status: Published.

Fu, Y. P., Kohaar, I, Moore, L. E., Lenz, P., Figueroa, J. D., Tang, W., Porter-Gill, P., Chatterjee, N., Scott-Johnson, A., Garcia-Closas, M., Muchmore, B., Baris, D., Paquin, A., Ylaya, K., Schwenn, M., Apolo, A. B., … Prokunina-Olsson, L. The 19q12 bladder cancer GWAS signal: association with cyclin E function and aggressive disease. Cancer Research. 2014, Oct; 74(20): 5808-5818. Cited in PubMed; PMID: 25320178. Pub Status: Published.

Fu, Y. P., Kohaar, I, Rothman, N., Earl, J., Figueroa, J. D., Ye, Y., Malats, N., Tang, W., Liu, L., Garcia-Closas, M., Muchmore, B., Chatterjee, N., Tarway, M., Kogevinas, M., Porter-Gill, P., Baris, D., Mumy, A., Albanes, D., … Prokunina-Olsson, L. Common genetic variants in the PSCA gene influence gene expression and bladder cancer risk. Proceedings of the National Academy of Sciences of the United States of America. 2012, Mar; 109(13): 4974-4979. Cited in PubMed; PMID: 22416122. Pub Status: Published.

Le Lann, L., Jouve, P. E., Alarcón-Riquelme, M., Jamin, C., Pers, J. O., PRECISESADS Flow Cytometry Study Group, & PRECISESADS Clinical Consortium. Standardization procedure for flow cytometry data harmonization in prospective multicenter studies. Scientific Reports. 2020, Jul; 10(1): 11567. Cited in PubMed; PMID: 32665668. Pub Status: Published.

Muchmore, B., & Alarcón-Riquelme, M. E. CymeR: cytometry analysis using KNIME, docker and R. Bioinformatics. 2017, Mar; 33(5): 776-778. Cited in PubMed; PMID: 27998935. Pub Status: Published.

Muchmore, B., Muchmore, P., Lee, C. W., Alarcón-Riquelme, M. E., & Muchmore, A. Tracking Potential COVID-19 Outbreaks With Influenza-Like Symptoms Urgent Care Visits. Pediatrics. 2020, Oct; 146(4): 1798. Cited in PubMed; PMID: 32699069. Pub Status: Published.

Musunuru, K., Strong, A., Frank-Kamenetsky, M., Lee, N. E., Ahfeldt, T., Sachs, K. V., Li, X., Li, H., Kuperwasser, N., Ruda, V. M., Pirruccello, J. P., Muchmore, B., Prokunina-Olsson, L., Hall, J. L., Schadt, E. E., Morales, C. R., … Rader, D. J. From noncoding variant to phenotype via SORT1 at the 1p13 cholesterol locus. Nature. 2010, Aug; 466(7307): 714–719. Cited in PubMed; PMID: 20686566. Pub Status: Published.

Onabajo, O. O., Muchmore, B., & Prokunina-Olsson, L. The IFN-L4 Conundrum: When a Good Interferon Goes Bad. Journal of Interferon & Cytokine Research. 2019, Oct; 39(10): 636-641. Cited in PubMed; PMID: 31241411. Pub Status: Published.

Park, H., Serti, E., Eke, O., Muchmore, B., Prokunina-Olsson, L., Capone, S., Folgori, A., & Rehermann, B. IL-29 is the dominant type III interferon produced by hepatocytes during acute hepatitis C virus infection. Hepatology. 2012, Nov; 56(6): 2060-2070. Cited in PubMed; PMID: 22706965. Pub Status: Published.

Prokunina-Olsson, L., Muchmore, B., Tang, W., Pfeiffer, R. M., Park, H., Dickensheets, H., Hergott, D., Porter-Gill, P., Mumy, A., Kohaar, I., Chen, S., Brand, N., Tarway, M., Liu, L., Sheikh, F., Astemborski, J., Bonkovsky, H. L., … O'Brien, T. R. A variant

upstream of IFNL3 (IL28B) creating a new interferon gene IFNL4 is associated with impaired clearance of hepatitis C virus. Nature Genetics. 2013, Feb; 45(2): 164-171. Cited in PubMed; PMID: 23291588. Pub Status: Published.

Ruiz-Limon, P., Ortega-Castro, R., Barbarroja, N., Perez-Sanchez, C., Jamin, C., Patiño-Trives, A. M., Luque-Tevar, M., Ibáñez-Costa, A., Perez-Sanchez, L., de la Rosa, I. A, ... PRECISESADS Clinical Consortium and Flow Cytometry Study Group. Molecular Characterization of Monocyte Subsets Reveals Specific and Distinctive Molecular Signatures Associated With Cardiovascular Disease in Rheumatoid Arthritis. Frontiers in Immunology. 2019, May; 21(10): 1111. Cited in PubMed; PMID: 31169830. Pub Status: Published.

Shebl, F. M., Pfeiffer, R. M., Buckett, D., Muchmore, B., Chen, S., Dotrang, M., Prokunina-Olsson, L., Edlin, B. R., & O'Brien, T. R. 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. The Journal of Infectious Diseases. 2011, Dec; 204(12): 1843-1847. Cited in PubMed; PMID: 22013224. Pub Status: Published.

Poster Presentation

Muchmore, B., Le Lann, L., Jamin, C., consortium PRECISESADS, Marañon, C., Pers, J.O., & Alarcon-Riquelme, M.E. (March, 2017). *02.16 Machine learning of flow cytometry data encompassing seven systemic autoimmune diseases and controls.* Poster presented at: Annals of the Rheumatic Diseases; Athens, GRC.

Muchmore, B., Park, H., Dickensheets, H., O'Brien, T. R., Rehermann, B., Donnelly, R., & Prokunina-Olsson L. (April, 2011). *Abstract 3751: Expression analysis of the IL28A, IL28B, IL29 and IL28L genes in primary human peripheral blood mononuclear cells and hepatocytes: Effects of activation mode, time-course and genotypes.* Poster presented at: AACR 102nd Annual Meeting; Orlando, FL, USA.

Muchmore, B., Tang, W., Porter-Gill, P., Kohaar, I., Liu, L., Brand, N., Park, H., Dickensheets, H., Sheikh, F., Rehermann, B., Donnelly, RP., O'Brien, T.R., & Prokunina-Olsson L. (September, 2013). *182 : Identification and characterization of interferon-lambda-4 (IFN-lambda-4), a novel class-2 cytokine which impairs clearance of hepatitis C virus.* Poster presented at: Inaugural Meeting of the International Cytokine and Interferon Society; San Francisco, CA, USA.

Oral Presentation

Muchmore, B. (March, 2016). *CymeR: Cytometry analysis using KNIME, Docker and R.* Oral Presentation presented at: The Conference of Complex Diseases; Granada, ESP.

Muchmore, B. (March, 2017). *Real-time machine learning of OMICS data.* Oral Presentation presented at: PRECISESADS General Assembly; Suresnes, FRA.

Muchmore, B. (May, 2020). *Real-time monitoring of influenza and COVID-19 in urgent cares across the United States.* Oral Presentation presented at: University of Vermont Medical Center Pediatric Grand Rounds; Burlington, VT, USA.

Muchmore, B. (February, 2016). *Dockerizing KNIME - Recipes for a KNIME cocktail.* Oral Presentation presented at: KNIME Spring Summit; Berlin, DEU.

Hobbies & Interests

Woodworking, aquaponics, soccer and the R programming language.

Language Fluency

Language	Language Proficiency	Proficiency Description
English	Native/functionally native	I converse easily and accurately in all types of situations. Native speakers, including the highly educated, may think that I am a native speaker, too.
Russian	Basic	I speak the language imperfectly and only to a limited degree and in limited situations. I have difficulty in or understanding extended conversations.
Spanish/Spanish Creole	Basic	I speak the language imperfectly and only to a limited degree and in limited situations. I have difficulty in or understanding extended conversations.
Thai	Basic	I speak the language imperfectly and only to a limited degree and in limited situations. I have difficulty in or understanding extended conversations.

Other Awards/Accomplishments

Patent: Ludmila Prokunina (NCI), Thomas O'Brien (NCI), Brian P. Muchmore (NCI) and Raymond P. Donnelly (FDA). NOVEL INTERFERON-(lambda)-4 (IFNL-4) PROTEIN, RELATED NUCLEIC ACID MOLECULES, AND USES THEREOF. Ref: E-217-2011-1. U.S. Pat: 10,545,147 issued 2020-01-28.