



## Matthew Steven MacDougall

- Postdoctoral Medical Fellow, Immunology and Allergy
- Fellow in Pediatrics - Ped Stem Cell Transplantation

### Bio

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#### CLINICAL FOCUS

- Fellow
- Allergy and Immunology
- Pediatrics

#### PROFESSIONAL EDUCATION

- Doctor of Philosophy, University of Illinois Chicago (2021)
- Bachelor of Science, Unlisted School (2010)
- Master of Science, University of Toronto (2012)
- Doctor of Medicine, University of Illinois Chicago (2021)
- Residency, Stanford University , Pediatrics (2024)
- PhD, University of Illinois College of Medicine , Biochemistry and Molecular Genetics (2021)
- MD, University of Illinois College of Medicine (2021)
- MS, University of Toronto , Laboratory Medicine and Pathobiology (2012)
- BScH, Queen's University , Biochemistry (2010)

#### PATENTS

- Clarke R, Merrill BJ, MacDougall MS, Pennington HM, Shy BR.. "United States Patent WO2019067322 CRISPR/CAS SYSTEM AND METHOD FOR GENOME EDITING AND MODULATING TRANSCRIPTION.", University of Illinois
- Clarke R, Merrill BJ, MacDougall MS, Balanis NGK, DePooter R, Harding C, Mancinelli G.. "United States Patent PCT/US2023/013240 SYSTEMS FOR CELL PROGRAMMING AND METHODS THEREOF", Syntax Bio, Jun 1, 2024
- Clarke R, Merrill BJ, MacDougall MS, Balanis NGK, DePooter R, Harding C, Mancinelli G.. "United States Patent PCT/US2023/013240 SYSTEMS FOR CELL PROGRAMMING AND METHODS THEREOF", Syntax Bio, Jun 1, 2024

### Publications

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#### PUBLICATIONS

- **Immunodeficiency: Gene therapy for primary immune deficiency.** *Allergy and asthma proceedings*  
Afzal, S. Y., MacDougall, M. S., McGhee, S. A.  
2024; 45 (5): 384-388
- **CD39 delineates chimeric antigen receptor regulatory T cell subsets with distinct cytotoxic & regulatory functions against human islets** *FRONTIERS IN IMMUNOLOGY*  
Wu, X., Chen, P., Whitener, R. L., MacDougall, M. S., Coykendall, V. M. N., Yan, H., Kim, Y., Harper, W., Pathak, S., Iliopoulou, B. P., Hestor, A., Saunders, D. C., Spears, et al

2024; 15: 1415102

- **Sequential Activation of Guide RNAs to Enable Successive CRISPR-Cas9 Activities** *MOLECULAR CELL*  
Clarke, R., Terry, A. R., Pennington, H., Hasty, C., MacDougall, M. S., Regan, M., Merrill, B. J.  
2021; 81 (2): 226-+
- **Intracellular Ca<sup>2+</sup> Homeostasis and Nuclear Export Mediate Exit from Naive Pluripotency** *CELL STEM CELL*  
MacDougall, M. S., Clarke, R., Merrill, B. J.  
2019; 25 (2): 210-+
- **Enhanced Bacterial Immunity and Mammalian Genome Editing via RNA-Polymerase-Mediated Dislodging of Cas9 from Double-Strand DNA Breaks** *MOLECULAR CELL*  
Clarke, R., Heler, R., MacDougall, M. S., Yeo, N., Chavez, A., Regan, M., Hanakahi, L., Church, G. M., Marraffini, L. A., Merrill, B. J.  
2018; 71 (1): 42-+
- **Co-incident insertion enables high efficiency genome engineering in mouse embryonic stem cells** *NUCLEIC ACIDS RESEARCH*  
Shy, B. R., MacDougall, M. S., Clarke, R., Merrill, B. J.  
2016; 44 (16): 7997-8010
- **Integration of the naive pluripotency gene network with the response to GSK3 inhibition by Tcf7l1-driven enhancer decommissioning.** *Stem cell reports*  
Kwon, J., Zhang, J. Y., Shy, B. R., MacDougall, M. S., Leung, E. H., Chronis, C., Gounari, F., Merrill, B. J.  
2026: 102980
- **Infant in extremis: respiratory failure secondary to lower airway infantile hemangioma.** *BMC pediatrics*  
MacDougall, M. S., Afzal, S. Y., Freedman, M. S., Han, P.  
2022; 22 (1): 744
- **Topical Vapocoolant-Associated Vaso-occlusive Event in a 10-year-old with Sickle Cell Disease.** *Pain management nursing : official journal of the American Society of Pain Management Nurses*  
Kothamasu, A., MacDougall, M. S., Mallard, J., Hsu, L. L.  
2021; 22 (5): 631-633
- **The NAMPT Promoter Is Regulated by Mechanical Stress, Signal Transducer and Activator of Transcription 5, and Acute Respiratory Distress Syndrome-Associated Genetic Variants** *AMERICAN JOURNAL OF RESPIRATORY CELL AND MOLECULAR BIOLOGY*  
Sun, X., Elangovan, V., Mapes, B., Camp, S. M., Sammani, S., Saadat, L., Ceco, E., Ma, S., Flores, C., MacDougall, M. S., Quijada, H., Liu, B., Kempf, et al  
2014; 51 (5): 660-667