Ariel Mundo Ortiz

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Academic Appointments

McGill University *School of Population and Global Health* Montréal, QC

Research Associate October 2026-Present

Centre de recherche du CHUM (CRCHUM) Montréal, QC

Postdoctoral Fellow January 2024- October 2026

Université de Montréal *ESPUM* Montréal, QC

Postdoctoral Fellow July 2022- December 2023

Universidad Rafael Landivar Guatemala

Teaching Assistant Professor January 2016- July 2017

Adjunct Professor January 2013- July 2017

Education

University of Arkansas, PhD. Biomedical Engineering August 2017- May 2022

Universidad Rafael Landivar, B.S. Chemical Engineering (*cum laude*) January 2005- December 2009

Other Relevant Experience

Lacteos Balcanicos Glad

Assistant Plant Engineer January 2012 - July 2012

Publications

Journal Articles

Emond Jean-Philippe, Cheung Vincent Weng-Jy, **Mundo Ortiz, Ariel I.** et al. "Older age and sex differences in the proportion of vital signs flagged as abnormal". PloS One (May 2026). https://doi.org/10.1371/journal.pone.0349936

Mundo Ortiz, Ariel I., Emond Jean-Philippe, Cheung Vincent Weng-Jy, Saeed Sahar, Desmarais Philippe, Larivière François, Hétu Pierre-Olivier & Nguyen Quoc Dinh. "The impact of pathological fluctuations versus biological variation on the interpretation of laboratory values". *Practical Laboratory Medicine* (November 2025). https://doi.org/10.1016/j.plabm.2025.e00511.

Cheung Vincent Weng-Jy, Libotte Michaël, Nguyen Patrick Viet-Quoc, Minh Vu Thien-Tuong, Émond Jean-Philippe, **Mundo Ortiz Ariel I.**, Desmarais Philippe,Nguyen Quoc Dinh. "Preliminary feasibility and development of a heart rate-based mobility and activity scale for hospitalized older adults". *The Journals of Gerontology: Series A* (November 2025) https://doi.org/10.1093/gerona/glaf212

El-Mousawi Fatima, **Mundo Ortiz Ariel I.**, Berkat Rawda, Nasri Bouchra. "The Impact of Flood Adaptation Measures on Affected Population's Mental Health: A mixed method Scoping Review". *Disaster Medicine and Public Health Preparedness* (2024). https://doi.org/10.1101/2023.04.27.23289166

Mundo Ortiz Ariel I., Nasri Bouchra. "Socio-demographic determinants of COVID-19 vaccine uptake in Ontario: Exploring differences across the Health Region model". *Vaccine* (2024). https://doi.org/10.1016/j.vaccine.2024.02.045.

Molla Jeta, Sekkak Idriss, **Mundo Ortiz Ariel I.**, Moyles Iain, Nasri Bouchra. "Mathematical modeling of mpox: a scoping review". *One Health* (2023). https://doi.org/10.1016/j.onehlt.2023.100540

Mundo Ortiz Ariel I., Muhammad Abdussaboor, Balza Kerlin, Nelson Christopher E., Muldoon Timothy J. "Longitudinal examination of perfusion and angiogenesis markers in primary colorectal tumors shows distinct signatures for metronomic and maximum-tolerated dose strategies". *Neoplasia* (2022). https://doi.org/10.1016/j.neo.2022.100825

Mundo Ortiz Ariel I., Tipton John R., Muldoon Timothy J. "Generalized additive models to analyze non-linear trend sin biomedical longitudinal data using R: Beyond repeated measures ANOVA and Linear Mixed Models." *Statistics in Medicine* (2022). https://doi.org/10.1002/sim.9505

Mundo Ortiz Ariel I., Greening Gage, Fahr Michael J., Hale Lawrence N., Bullard Elizabeth, Rajaram Narasimhan, and Muldoon Timothy J. "Diffuse reflectance spectroscopy to monitor murine colorectal tumor progression and therapeutic response." *Journal of Biomedical Optics* (2020). https://doi.org/10.1117/1.JBO.25.3.035002

Greening Gage, **Mundo Ortiz Ariel I.**, Rajaram Narasimhan, Muldoon Timothy J. "Sampling depth of a diffuse re-flectance spectroscopy probe forin-vivophysiological quantification of murine subcutaneous tumor allografts". *Journal of Biomedical Optics* (2018). https://doi.org/10.1117/1.JBO.23.8.085006

Conference Presentations

Mundo Ortiz, Ariel I. "Parallel computing in R to analyze big health data". RMedicine 2026 Conference. May 2026.

Mundo Ortiz, Ariel I. "Reproducible papers in the life sciences using R". *CANSSI Statistical Software Conference*. November 2022. Recording: https://www.youtube.com/watch?v=4yRAR9fS3pg

Mundo Ortiz, Ariel I.. "Statistics and Reproducibility in Biomedical Research". *2022 Toronto Workshop on Reproducibility*. Toronto, ON. February 2022. Recording: https://www.youtube.com/watch?v=Fvkp20X5xwA

Mundo Ortiz, Ariel I., Muldoon, Timothy J. "Longitudinal optical and molecular quantification provides insight into the effect of different dosing strategies in colorectal cancer". *2022 Biophotonics Congress: Biomedical Optics*. Fort Lauderdale, FL, USA, April 2022.

Mundo Ortiz, Ariel I. "Statistics and Reproducibility in Biomedical Research: Why we need both". Toronto Workshop on Reproducibility, University of Toronto, February 2022. Recording available here.

Mundo Ortiz, Ariel I. "Using generalized additive models for biomedical longitudinal data. *When linear models don't work*". RMedicine 2021 Conference. Recording: https://tinyurl.com/39epnrp6 Repository (slides and data): https://aimundo.rbind.io/talks/gams-biomedical/

Mundo Ortiz, Ariel I., Abdussaboor Muhammad, and Timothy J. Muldoon. "Optical and molecular longitudinal tracking of primary colorectal murine tumors shows differences in the angiogenic response to maximum-tolerated and metronomic approaches." In Label-free Biomedical Imaging and Sensing (LBIS) 2021, vol. 11655, p. 116551C. *International Society for Optics and Photonics*, 2021. https://doi.org/10.1117/12.2576906

Mundo Ortiz, Ariel I., Elizabeth Bullard, Kyle P. Quinn, and Timothy J. Muldoon. "Optical spectroscopic and imaging biomarkers of ulcerative colitis disease progression and remission (Conference Presentation)." In Multiscale Imaging and Spectroscopy, vol. 11216, p. 1121605. *International Society for Optics and Photonics*, 2020. https://doi.org/10.1117/12.2543369

Mundo Ortiz, Ariel I., Gage J. Greening, and Timothy Muldoon. "Characterization of a multimodal endoscopically deployable veterinary spectroscopy and imaging probe to determine therapeutic response in a murine orthotopic tumor model." In Label-free Biomedical Imaging and Sensing (LBIS) 2019, vol. 10890, p. 108901L. *International Society for Optics and Photonics*, 2019.

Awards and Recognition

Fields Institute: Mathematics for Public Health Festival (MfPHFest) October 2022

Received funding to attend the MfPHFest conference and present postdoctoral work done in the field of Statistics. (CAD 1,500)

Centre de recherches mathématiques (CRM) MfPH-CRM Postdoctoral Fellowship July 2022

Received postdoctoral fellowship for one year to analyze public health and behavioral data (CAD 50,000)

BME Rising Scholar June 2022

Selected by the committee of the BME Scholars Program at Washington University in St. Louis to receive mentorship about pathways and professional success in academic careers. Award included paid travel, conference attendance and honorarium.

Professional Awareness, Advancement, and Development (PADD) Scholar 2020-2021

Received funding and participated in the PAAD program to supplement my graduate education in persuasive speaking, commercialization, and data science (USD 1,500).

OMNI Endowed International Scholarship 2020

Granted as a scholar fulfilling the mission of the OMNI Center in Fayetteville (USD 500)

Fulbright Faculty Development Scholarship 2017-2019

Scholarship covered all costs of my PhD for the first two years. Only two scholarships awarded for that period in the whole country. (USD 78,000)

Grants

Canada Institutes of Health Research (CIHR) 2023

Co-investigator in the grant "epidemiological modelling of behavioural impact on mpox mitigation strategies" lead by Prof. Nasri from Université de Montréal. Funding secured: CAD 412,000. A record of the grant can be found in the CIHR funding decision database.

Arkansas Biosciences Institute 2021 seed grant competition 2021

Main author on a proposal to examine gene expression and optically derived markers in a mouse model of colorectal cancer. Funding secured: USD 30,000.

Languages

Spanish: Native speaker

English: Full professional competency

French: Full professional competency