Ariel Mundo

Graduate Research Assistant
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Employment

University of Arkansas

Graduate Research Assistant (University of Arkansas, Fayetteville, AR) 2017-Present

Conducting biomedical research in oncology in animal models using optics and molecular biology
Technical writing of academic papers, conference presentations, and student mentoring

Universidad Rafael Landivar

Teaching Assistant Professor 2016-2017

Professor of Chemistry at the Environmental and Agricultural Sciences Department
Prepared lectures, supervised labs, mentored students, wrote lab manuals

Adjunct Professor 2013-2017

Taught Introductory Chemistry in the Engineering, Environmental and Agricultural, and Health Sciences Departments

Lacteos Balcanicos Glad

Assistant Plant Engineer 2012

In charge of the production of the main product (yogurt, ≈ 3000 L per week)

Education

University of Arkansas, PhD. Biomedical Engineering Expected 2022

Universidad Rafael Landivar (Guatemala), B.S. Chemical Engineering (cum laude) 2009

Publications

Journal Articles

Mundo, Ariel I., John R. Tipton, and Timothy J. Muldoon. "Using generalized additive models to analyze biomedical non-linear longitudinal data." *bioRxiv* (2021). https://doi.org/10.1101/2021.06.10.447970 (This preprint has been accepted with revisions in *Statistics in Medicine*)

Mundo, Ariel I., Gage J. Greening, Michael J. Fahr, Lawrence N. Hale, Elizabeth A. Bullard, Narasimhan Rajaram, and Timothy J. Muldoon. "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

Conference Presentations

Mundo, 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, 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, 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, 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

Fulbright Faculty Development Scholarship 2017-2019

Only two scholarships awarded for that period in the whole country

OMNI Endowed International Scholarship 2020

Granted as a scholar fulfilling the mission of the OMNI Center in Fayetteville

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.

Grants

Arkansas Biosciences Institute 2021 seed grant competition 2021

Main author on a proposal submitted with my advisor to examine gene expression and optically derived markers in a mouse model of colorectal cancer ($30,000 in funding). *Proposal scored in the top 2 of all the individual research projects for the cycle*.

References

Dr. Timothy Muldoon, Associate Professor, Department of Biomedical Engineering, University of Arkansas
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Dr. Christopher Nelson, Assistant Professor, Department of Biomedical Engineering, University of Arkansas
nelsonc@uark.edu

Dr. John R. Tipton, Assistant Professor, Department of Mathematical Sciences, University of Arkansas
jrtipton@uark.edu