



COLLEGE OF PHARMACY  
**PHARMACEUTICAL SCIENCES**  
UNIVERSITY OF MICHIGAN

**Pharmaceutical Sciences Seminar Series**

Wednesday, November 29, 2023

4:00pm

2548 North University Building

Zoom

**“Preclinical development of aerosol therapies  
for treatment of pulmonary mycobacterial infections”**

Presented by:



**Mercedes Gonzalez Juarrero, Ph.D.**  
Microbiology, Immunology and Pathology  
Mycobacteria Research Laboratories  
Colorado State University

**Abstract:** The Gonzalez-Juarrero laboratory focus on the immune pathogenesis and development of aerosol therapies for mycobacterial diseases with primary emphasis on tuberculosis (TB) and non-tuberculous (NTM) diseases. For a therapy to be effective, it must reach its target and although TB and NTMs are also systemic diseases, pulmonary infections are most frequent. Treatment of pulmonary mycobacteria infections require long term administration of several antibiotics and in many instances the major challenge is to reach and sustain adequate concentrations in this organ. The latter can only be achieved by administration of large systemic doses (via oral or parenteral route), which can lead to toxicity, or by direct administration to the lungs via inhalation. We have developed several experimental animal models that allows for testing of aerosolized anti-TB and anti-NTM drugs. We test for efficacy, toxicity and pharmacokinetics of immunomodulators and antibiotics and we study temporal and spatial relationships of immune cells and biomarkers during disease and therapy.

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