



# CHEMISTRY DEPARTMENT SEMINAR

## Nanomedicine Toward Health Equity

**Dr. Olivia L. Lanier**

Assistant Professor

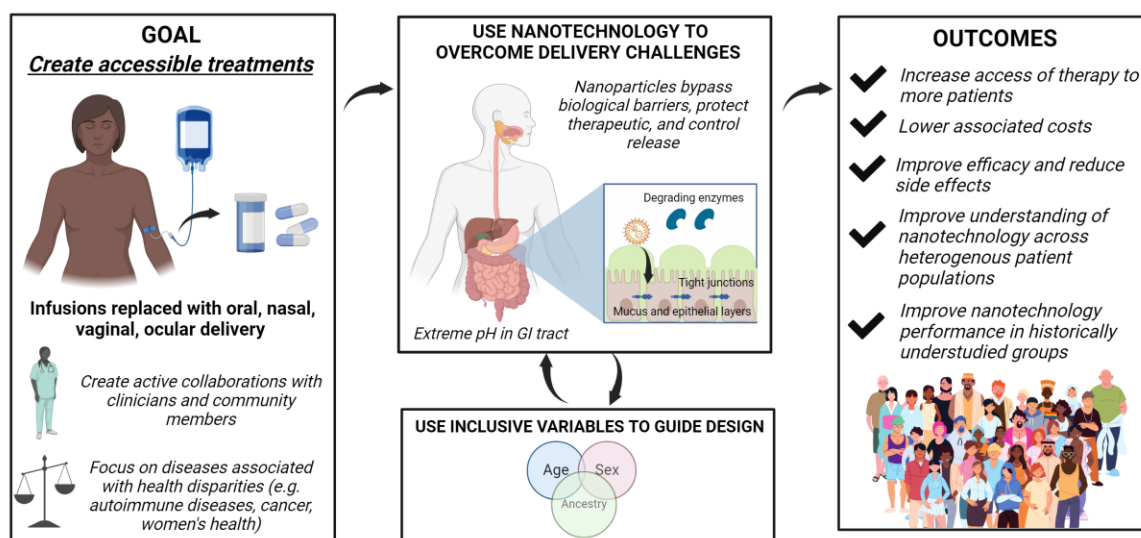
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In this talk, I will discuss the intersection of nanomedicine and health equity, focusing on how innovative drug delivery systems can address unmet needs in diverse populations. Drawing on my prior research experience, I will highlight applications of drug delivery for oral biologics, magnetically triggered release of placental proteins, and drug-eluting contact lenses, illustrating how these projects laid the foundation for my current focus on health equity in biomedical engineering.

Central to my approach are the "Ten Simple Rules in Biomedical Engineering To Improve Healthcare Equity," which I developed to guide research and education in this field. I will describe how these principles are applied in my lab to ensure inclusivity and accessibility in nanomedicine development.

Building on this framework, I will introduce several ongoing and prospective projects, including vaginal delivery systems for ovarian cancer therapeutics, gene therapy for sickle cell disease, sublingual delivery of TNF-alpha inhibitors for cardiometabolic disorders, and investigations into sex differences in nanomedicine performance. These projects reflect my lab's commitment to tackling systemic inequities in healthcare through thoughtful experimental design and translational science. By integrating technical innovation with a health equity lens, I aim to inspire new partnerships and foster impactful advancements in therapeutics.



**February 21<sup>st</sup> Friday @ 2.00 p.m. – Lopez 106**