

Marrissa Izykowicz

Roche Award

Ph.D. Candidate, Chemistry and Biochemistry

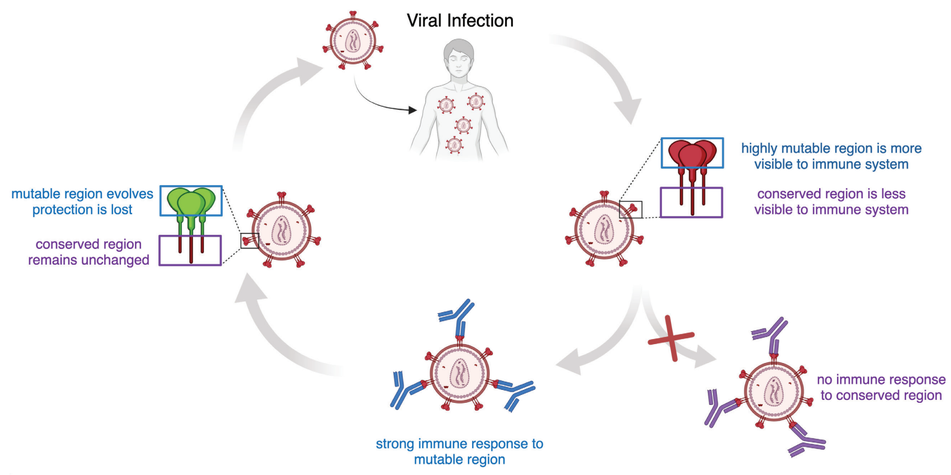
Third Year ARCS Scholar

Georgia Tech

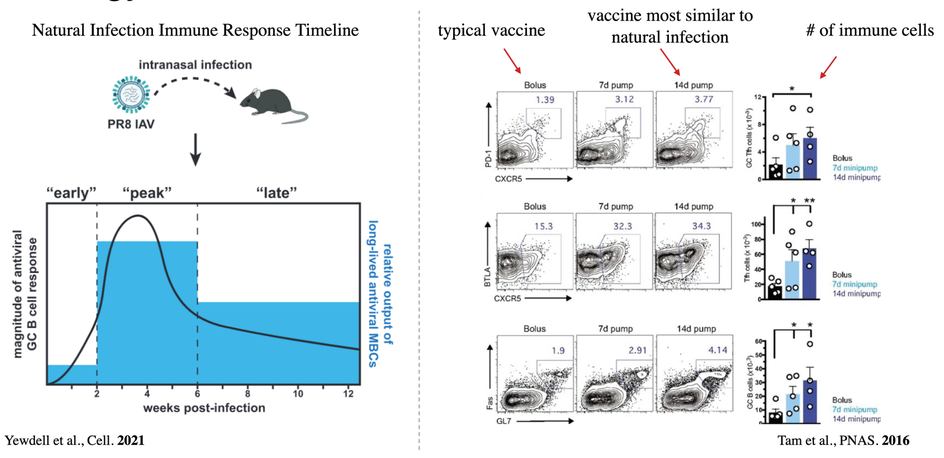
Soft Materials for Hard Problems: Development of Hydrogel Materials for the Advancement of Virometric Vaccines

We use an interdisciplinary approach (e.g. a combination of organic chemistry, biochemistry, and genetic engineering) to design vaccines that produce robust immune responses and long-lived immunologic memory to highly mutable viruses like HIV and Influenza.

Viral Epitope Escape: A Global Problem

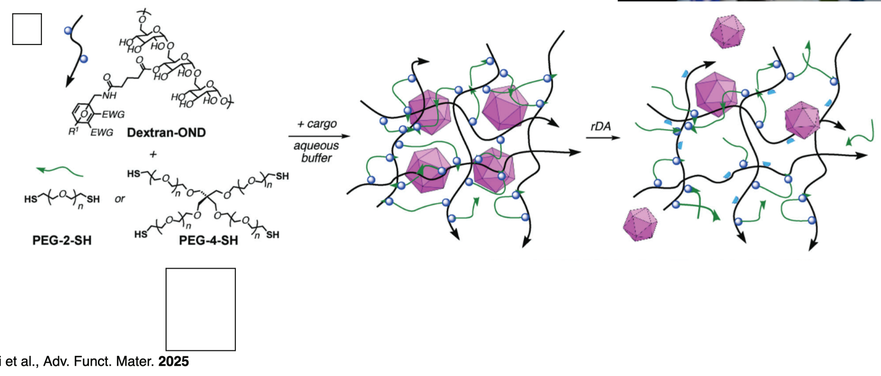


”Viromimetic” Vaccines Outperform Typical Vaccination Strategy



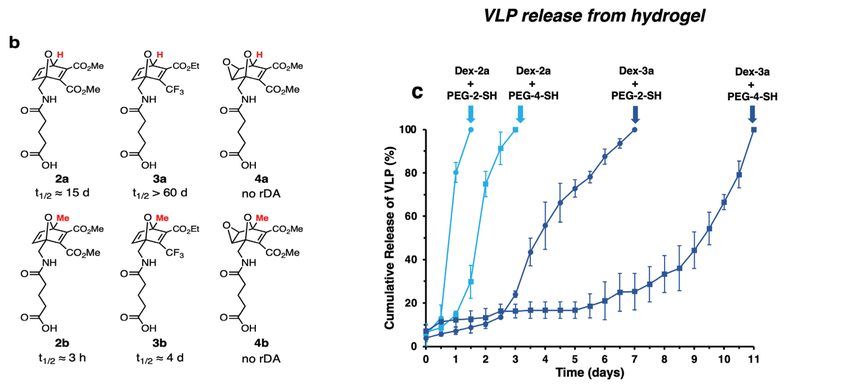
Hydrogel Formation and Degradation





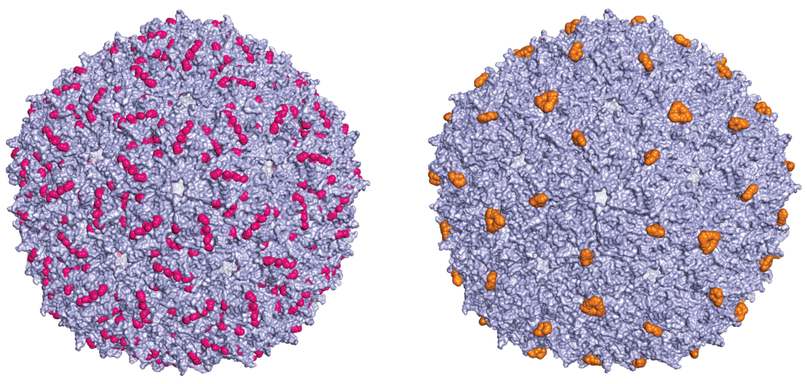
Shi et al., Adv. Funct. Mater. **2025**

Degradation/Cargo Release Over Time

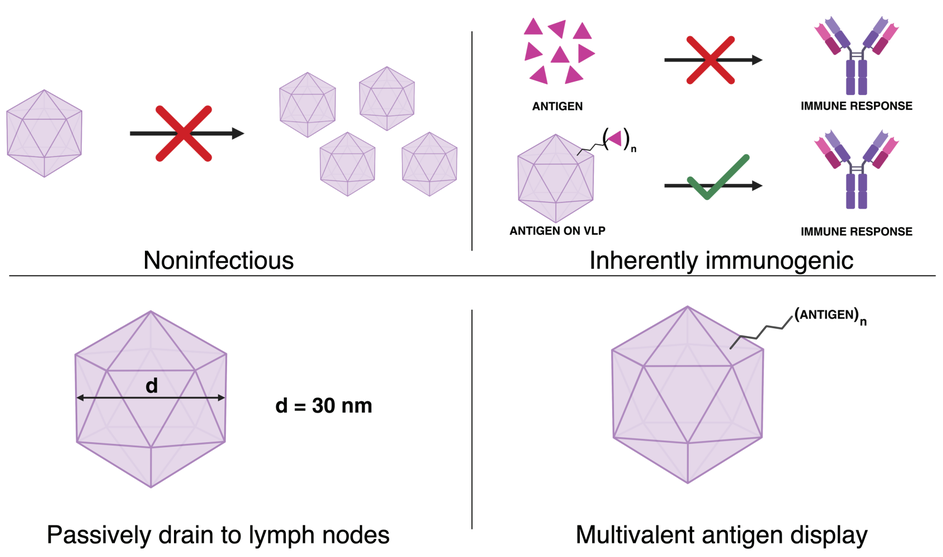


Shi et al., Adv. Funct. Mater. **2025**

Vaccine Carriers – Virus-Like Particles



PDB: 6N4V



SCHOLAR AWARDS CELEBRATION

250 Years of American Science: Honoring Those Who Advance It

ARCS ADVANCING SCIENCE IN AMERICA®