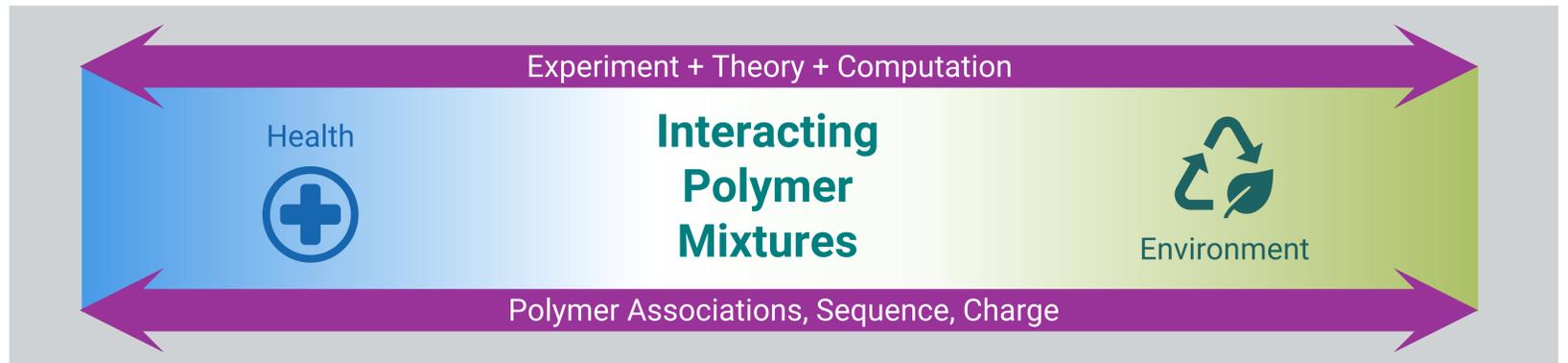




PROF. SCOTT DANIELSEN



✉ scott.danielsen@mse.gatech.edu
 🌐 danielsen.mse.gatech.edu
 📄 /scottdanielsen
 🐦 @scottdanielsen @DanielsenGroup

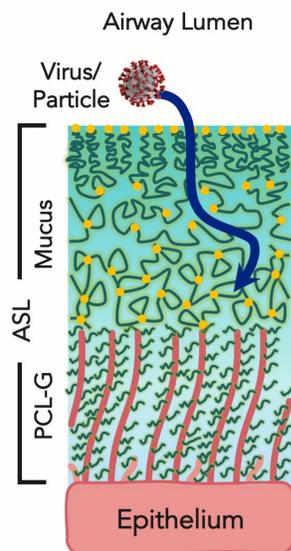


STRUCTURE AND MECHANICS OF MUCUS IN HEALTH & DISEASE

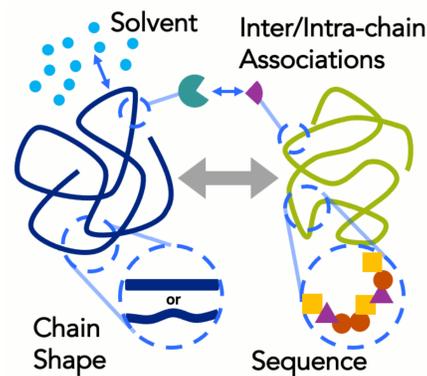
How do allergens and pathogens traverse mucus to reach the epithelia and instigate a systemic response?

How does the structure of associative networks affect their mechanics?

Can we promote efficient delivery of prophylactic and therapeutic agents to mucus?



SPECIFIC & SEQUENCE-DEFINED ASSOCIATIONS FOR COMPATIBILIZATION

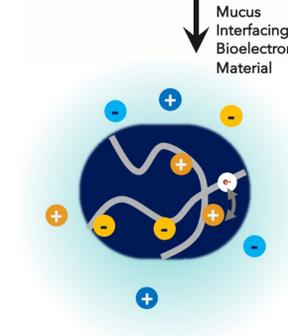
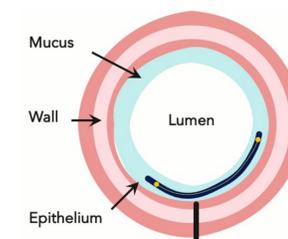


What molecular design rules connect the sequence of sticky groups to their structure and dynamics?

Can we develop drug excipients that stabilize conformations and modulate activity?

Can we recycle or upcycle mixed plastic waste streams by compatibilizing with associations?

ELECTROSTATIC CONTROL OF MIXED CONDUCTIVE HYDROGEL BIOELECTRONICS



How are chain conformations and electrostatics coupled, particularly in heterogeneous dielectric media?

Can we robustly design mixed ion-electron conductive fluids?

Can we bio-integrate mucosa with soft electronics to sense and actuate mucus?