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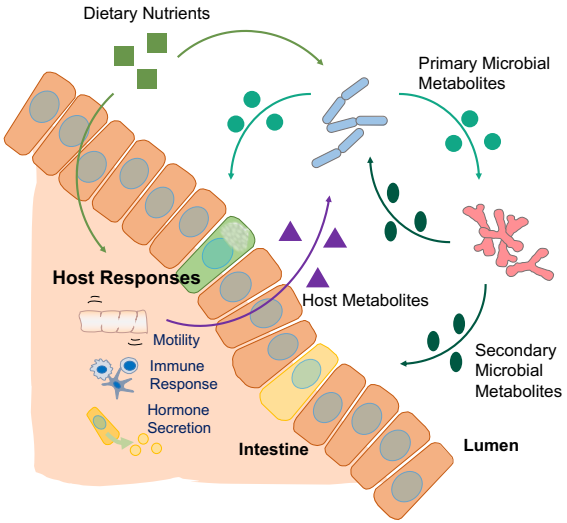
Communication between the gut microbiota and the host gastrointestinal tract has wide-ranging implications for systemic health. Environmental exposures, including diet, stress, disease, and disease treatment, strengthen and disrupt this communication, informing personalized nutrition approaches.



Research Interests

- Targeted nutrition interventions to leverage gut microbial metabolism
- Microbiota-Gut-Brain axis and neurotransmission
- Microbiota-Enterohepatic axis and sterol signaling
- Personal and environmental factors affecting gastrointestinal motility, barrier function, and nutrient bioavailability
- Psychological stress and behavioral disorders

Current Projects

- Smartpill motility capsule – How do fibers in whole grains influence real-time GI motility, cardiometabolic risk, and microbial metabolism?
- Fiber and Stress – How do prebiotic fibers confer resilience to stress-induced diarrhea and anxiety?
- Fiber and Tumors – Can functional fibers reduce mammary tumor-induced inflammation and bile acid dysregulation?

Keywords

Probiotics, prebiotics, gut microbiome, small molecule signaling, gut health, personalized nutrition, brain health, liver health, stress, cancer

Interest Areas for Collaboration/Future Work

Dr. Loman is looking for collaborators in the following areas:

- Annotation and knock out microbial functional genes related to amine and sterol metabolism
- Functional neuron evaluation (ex: patch-clamp, MRI)
- Sample collection/intervention involving patients with cancer

Personalized Nutrition Initiative

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