Baylor College of Medicine

DEPARTMENT OF MOLECULAR VIROLOGY AND MICROBIOLOGY

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Principal Investigator: Leigh Greathouse, PhD, MPH, MS, RD
Co-PI: Robert Britton, Ph.D.
RE: Illuminate Proposal

Dear Review Committee,

As Professor of Molecular Virology and Microbiology at Baylor College of Medicine, I fully endorse the proposed study **Development of precision medicine prebiotics using mini-bioreactor arrays (MBRAs)**.

I am excited to be a part of this study and to assist Dr. Greathouse and Baylor University in establishing the MBRA system. As original developer of this system, I have expertise in all aspects of set up and experimental design, which makes me well-suited to serve as Co-Principal Investigator on this Illuminate Proposal. Our laboratory is interested in understanding how the intestinal microbiota provides a barrier to incoming pathogens and how perturbations of the microbiota result in an established infection. We have focused most of our attention on the pathogen *Clostridium difficile*, which is the most common cause of antibiotic associated diarrhea. We developed the mini-bioreactors and mice colonized with a human intestinal microbiota to address which members of the community are responsible for inhibiting *C. difficile* invasion. Thus, our research is complimentary and potentially synergistic.

The results from this study will lay the ground work for a larger multi-phase study that is well-positioned to address the need for prebiotic formulations and treatments to combat infections. Given that the NIH will be announcing a large multi-center funding strategy to support nutrition research, this proposal is well timed to ready Baylor to take advantage of this funding opportunity. Ultimately, this research will lead to a deeper understanding of the dietary prebiotic fibers that modulate the gut microbiome, and identify the prebiotics that support microbial communities capable of both resistance to and eviction of pathogens.

I have little doubt that this project will develop into a highly impactful long-term collaboration with exceptional external funding opportunities from multiple agencies, and that will generate innovative research on the diet-microbiome relationship. Overall, I am well positioned to provide excellent support for this study and we look forward to collaboration to facilitate Baylor's mission of R1 Status.

Best regards,

RBritton

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