# SPRING 2023

## Biochemistry and Molecular Biology Brown Bag Series

# Oleg Paliy

**Assistant Professor**

***"Human gut microbiota fermentation of cooked eggplant, garlic, and onion supports distinct microbial communities"***

**Tuesday, February 21, 2023**

**11:00 AM**

## Location 135 Oelman Hall

**Lab: Oleg Paliy, Ph.D.**

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Boonshoft School of Medicine
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https://science-math.wright.edu/biochemistry-and-molecular-biology

## Abstract

### Human gut microbiota fermentation of cooked eggplant, garlic, and onion supports distinct microbial communities

Three vegetables – eggplant, garlic, and onion – were each fried, grilled, or roasted. The cooked vegetables were then subjected to an *in vitro* digestion-fermentation process to simulate the passage of food through the human oro-gastro-intestinal tract. The undigested fractions were then anaerobically fermented by the complex human gut microbiota. We assessed the structure of microbiota maintained on each cooked vegetable, measured the levels of furosine, a marker of the Maillard reaction, and determined the antioxidant capacities in all samples. Overall, vegetable type had the largest effect on the microbiota structure followed by the cooking method. Onion fermentation supported a more beneficial community including an expansion of *Bifidobacterium* members and inhibition of Enterobacteriaceae. Fermentation of cooked garlic promoted *Faecalibacterium*. Among cooking methods, roasting led to a higher ratio of beneficial-to-detrimental microbes in comparison with grilling and frying, possibly due to the exclusion of any cooking oil in the cooking process.