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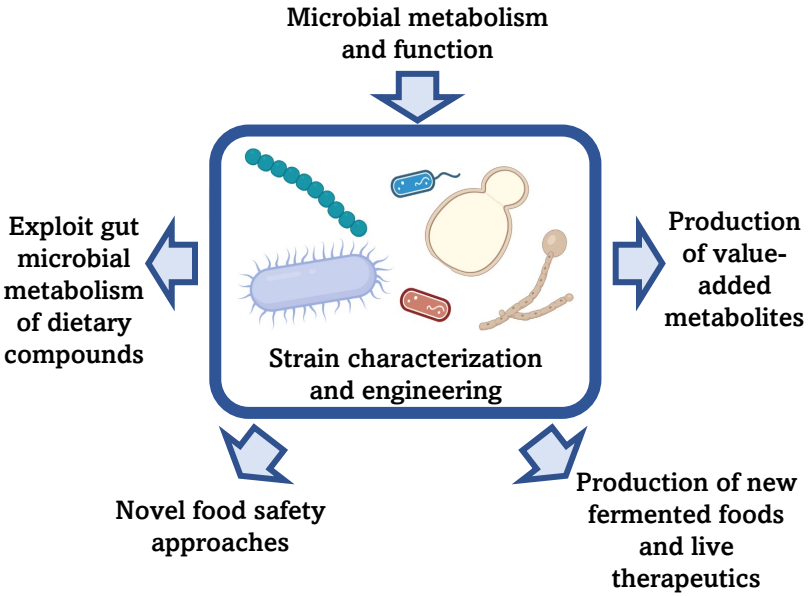
The focus of Dr. Miller's research is to characterize and exploit microbial metabolism for improved activation of dietary compounds, improved health benefits from fermented foods, and production of sustainable value-added metabolites.



Research Interests

- Microbial metabolism of dietary bioactives (glucosinolates)
- Identification and exploitation of Lactic Acid Bacteria metabolites that contribute to the health benefits of fermented foods
- Development of genetic tools for Gram-positive bacteria
- Application of precision fermentation for sustainable production of food and food ingredients

Current Projects

- Enhancing the benefits of brassica (USDA – NIFA)
- Optimizing bioactive metabolites in fermented foods to improve human immune function (USDA – NIFA)
- iPreFers (Illinois Center for Precision Fermentation) and PreFers (Centre for Precision Fermentation and Sustainability)

Keywords

Precision fermentation, food fermentation, Lactic Acid Bacteria (LAB), Lactobacillus, glucosinolates, sulforaphane, Cas9

Interest Areas for Collaboration/Future Work

Dr. Miller is interested in working with scientists interested in exploring the health benefits of fermented foods. Furthermore, he is very interested in intestinal bitter-taste receptors and their role in the health benefits of brassica vegetables.

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