

# GRADUATE CERTIFICATE IN MICROBIOME SCIENCE AND ENGINEERING

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This graduate certificate provides a foundation in the concepts and methods of microbiome science and engineering and provides perspectives on the applications of those fundamentals to a range of topics in environmental, animal and human, plant, and industrial contexts.

Students interested in graduate work should refer to the Graduate and Professional Bulletin (<http://catalog.colostate.edu/general-catalog/graduate-bulletin/>).

## Learning Objectives

Students successfully completing this certificate will be able to:

1. Describe microbiomes, and compare/contrast microbiomes to single microbial species in terms of function;
2. Explain current methods for characterizing microbiomes, including the information obtained and the limitations of the methods;
3. Describe the role of microbiomes in human, animal, plant, or industrial systems and the functional interactions between microbiomes and their hosts;
4. Integrate concepts from microbiology, ecology, and physiology in the context of microbiome function; and
5. Apply knowledge of microbiome structure and function to propose methods of engineering the microbiome behavior.