

GRADUATE CERTIFICATE IN VECTOR-BORNE DISEASES

Vector-borne and zoonotic diseases continue to emerge and re-emerge, threatening human and animal health. This comprehensive certificate program in Vector-Borne Diseases (VBD) aims to provide CSU graduate students with a solid foundation in vector-borne diseases, equipping them with the knowledge and skills in this disciplinary area for careers in fields such as public health, vector control, and epidemiology.

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

Learning Objectives:

Upon successful completion, students will be able to:

1. Explain the role of arthropods in the spread of emerging vector-borne pathogens, including the description of transmission cycles of prominent vector-borne diseases, and how vector physiology and host-pathogen interaction contribute to pathogen transmission.
2. Apply vector control and epidemiologic principles in the context of managing emerging vector-borne diseases.

Requirements Effective Spring 2025

Additional coursework may be required due to prerequisites.

Code	Title	Credits
Core Courses		
MIP 533/VS 533	Epidemiology of Infectious Diseases/ Zoonoses	3
Biology of Disease Vectors Module: ^{2,3}		
MIP 567	Introduction to Biology of Disease Vectors	1
MIP 568	Biology of Arbovirus Vectors/Genetics	1
MIP 569	Biology of Parasite/Bacteria Vectors	1
Electives		
Select a minimum of six credits from the following:		6
AB 523	Advanced Evolution/Classification of Insects	
AB 529	Pesticide Resistance Evolution and Management	
AB 551	Advanced Integrated Pest Management	
BSPM 794	Independent Study ¹	
JTC 630	Health Communication	
MIP 535	Vector Collection and Identification Methods	
MIP 537A	Advanced Virology: Fundamental Concepts and New Insights ²	
MIP 537B	Advanced Virology: Mechanisms of Viral Disease ²	
MIP 537C	Advanced Virology: Vector-Borne Viruses ²	
MIP 540	Fundamentals of Biosafety and Biosecurity	
MIP 573A	Bacterial Pathogenesis: Introduction to Mechanisms ²	

MIP 573B	Bacterial Pathogenesis: Mechanisms and Lifestyle ²
MIP 573C	Bacterial Pathogenesis: Evading Host Defenses ²
MIP 795	Independent Study ¹

Program Total Credits: 12

*This certificate may have courses in common with other graduate certificates. A student may earn more than one certificate, but a given course may be counted only in one certificate program.

¹ Variable credit can be obtained towards the certificate by conducting research in a vector-biology lab. These independent study credits can only be taken after the 9 regular course credits have been completed.

² This course is offered in modular format, with three 1-credit modules.

³ All three modules must be taken to receive core credit.