

# VET MED POPULATION MEDICINE & DIAGNOSTIC SERVICES (VTPMD)

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## VTPMD 2990 - Undergraduate Research in Epidemiology (1-3 Credits)

Mentored research apprenticeship program designed to give laboratory experience in applied epidemiology to qualified unmatriculated high school students (participating in Cornell Summer College) or Cornell underclassmen. Students are placed in a research laboratory with a designed project under the direct supervision of a research associate (upper-level graduate student, post-doc, or faculty member). Students are graded on preparation, participation in laboratory, academic life, and appropriate acquisition of techniques. At the end of the six-week session, they are expected to give a brief (15- to 20-minute) oral presentation on their work and submit a manuscript in a form suitable for publication. The faculty director of the laboratory has ultimate responsibility for evaluating each student's work and assigning the grade.

**Prerequisites:** one year of basic biology (score of 5 on Biology Advanced Placement Examination of College Entrance Examination Board or BIOG 1000 level) or permission of instructor.

**Enrollment Information:** Enrollment limited to: undergraduate students.

**Exploratory Studies:** (CU-UG)

**Last Four Terms Offered:** Spring 2025, Fall 2024, Spring 2024, Fall 2023  
Schedule of Classes (<https://classes.cornell.edu/>)

## VTPMD 6250 - Evolutionary Genomics of Bacteria (1 Credit)

**Last Four Terms Offered:** Spring 2020, Spring 2019, Spring 2018, Spring 2017

Schedule of Classes (<https://classes.cornell.edu/>)

## VTPMD 6640 - Introduction to Epidemiology (3 Credits)

Course covers fundamental epidemiology concepts and methods in the investigation of determinants of health or disease in populations. Topics include causation, measures of disease frequency and association, sampling methods, selection and interpretation of diagnostic tests, type and characteristics of observational and controlled studies, and bias and confounding.

**Corequisites:** BTRY 6010 or permission of instructor.

**Exploratory Studies:** (CU-SBY)

**Last Four Terms Offered:** Fall 2024, Fall 2023, Fall 2021, Fall 2020  
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## VTPMD 6650 - Study Designs (2 Credits)

Design and interpretation of cross-sectional, case-control, and cohort studies (including controlled clinical trial). Design issues include sample size, bias, and relative advantages and disadvantages. Course objectives are to (1) know the difference between different epidemiologic study designs and relative advantages and disadvantages of each; (2) given a problem (usually a field situation), be able to design an appropriate epidemiologic study; (3) be able to effectively analyze and criticize published epidemiologic studies. Consists of lectures on the principles of epidemiologic study design and related issues (sample size calculations, validity and precision, and identification and minimizing of bias); basic analysis of epidemiologic data; and discussion of published epidemiologic studies. These include observational cohort studies (prospective and retrospective), cross-sectional studies, case-control studies, and hybrid studies (ambidirectional and other hybrid designs).

**Prerequisites:** VTPMD 6640, BTRY 6010.

**Last Four Terms Offered:** Spring 2025, Spring 2024, Spring 2023, Spring 2022

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## VTPMD 6660 - Advanced Methods in Epidemiology (3 Credits)

Concepts introduced in VTPMD 6640 and VTPMD 6650 are further developed, with emphasis on statistical methods. Topics include interaction, effect modification, stratified analysis, matching and multivariate (logistic regression) methods, survival analysis, repeated measures, and strategies for the analysis of epidemiologic data.

**Prerequisites:** VTPMD 6650, BTRY 6020.

**Last Four Terms Offered:** Fall 2024, Fall 2022, Fall 2021, Fall 2020  
Schedule of Classes (<https://classes.cornell.edu/>)

## VTPMD 6665 - Novel Methods in Epidemiology (3 Credits)

The goal of this team-taught course is to introduce students to novel methods in the investigation of epidemiologic concepts and determinants of health or disease in populations. The course will be comprised of short modules, each lasting 2-3 weeks, on cutting edge methods utilized in different epidemiology disciplines, such as: molecular epidemiology, mathematical modeling, economics, risk assessment, artificial intelligence, machine learning, diagnostic epidemiology, clinical trials, spatial epidemiology, and social sciences.

**Prerequisites:** VTPMD 6640, VTPMD 6660.

**Enrollment Information:** Enrollment limited to: graduate students; others with permission of instructor.

Schedule of Classes (<https://classes.cornell.edu/>)

## VTPMD 7080 - Epidemiology Seminar Series (1 Credit)

Discusses advanced theoretical and analytical epidemiologic concepts and techniques.

**Last Four Terms Offered:** Spring 2025, Fall 2024, Spring 2024, Fall 2023  
Schedule of Classes (<https://classes.cornell.edu/>)

## VTPMD 7660 - Graduate Research (1-6 Credits)

Enables students outside the section of epidemiology to receive graduate research credits for projects with epidemiological components.

**Enrollment Information:** Enrollment limited to: master's and Ph.D. students.

**Last Four Terms Offered:** Spring 2025, Fall 2024, Spring 2024, Fall 2023  
Schedule of Classes (<https://classes.cornell.edu/>)

**VTPMD 7990 - Independent Studies in Epidemiology (1-3 Credits)**

The purpose of this course is to investigate an epidemiologic topic with one of the instructors. It provides experience in problem definition, research design, and the analysis of epidemiologic data.

**Last Four Terms Offered:** Spring 2025, Fall 2024, Summer 2024, Spring 2024

Schedule of Classes (<https://classes.cornell.edu/>)