



New UC Davis Major! Global Disease Biology

College of Agricultural and Environmental Science

Managing global disease problems requires a multifaceted, holistic approach to address the full spectrum of human, animal, plant, and environmental health risks. This comprehensive effort is known as One Health.

***Global Disease Biology* is a collaboration between the Department of Plant Pathology, the School of Veterinary Medicine, and the School of Medicine**

The *Global Disease Biology* major uses an integrated approach to advance student understanding of the concept(s) of disease, the societal and personal impacts of past, present and future diseases, and the science behind disease discoveries, causes, evolution, diagnosis, treatment, and prevention.

Throughout a series of core courses, human, animal, and plant health issues, along with tools available to solve these problems, will be introduced to provide students with real-world scenarios in which they can apply and advance their creative and critical thinking skills.

A degree in Global Disease Biology prepares graduates with the knowledge, leadership skills and experiences required to excel in professions associated with global health, the environment, food safety and security, biological safety and security, and health policy as each relates to disease and health of people, animals, and plants in developing and developed countries.

What is “One Health”? *From the One Health Commission*

One Health is the collaborative effort of multiple health science professions, together with their related disciplines and institutions – working locally, nationally, and globally – to attain optimal health for people, domestic animals, wildlife, plants, and our environment.

- Convergence of human, animal, and plant health and the health of the environment
- Professional education and training
- Agricultural production and land use
- Disease surveillance, prevention and response, both infectious and chronic diseases
- Environmental agent detection and response
- Ensuring a safe food and water supply that is high quality, available and affordable
- Research, both basic and translational
- Natural resources and conservation
- Commonality of diseases among people and animals, such as cancer, obesity, and diabetes
- Public policy and regulation





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**Please visit our website for complete information
about the major and minor requirements**

Global Disease Biology Core:

GDB 90: Introduction to Global Disease Biology (1)

SAS 13: Disease and Society (3)

PMI 129Y: One Health: Human, Animal & Environment
Interfaces(3)

VME 158: Infectious Disease in Ecology and Conservation (3)

GDB 101: Epidemiology (4)

Pathogen/Disease courses:

PLP 120: Introduction to Plant Pathology (4) Lab

PMI 127: Medical bacteria and fungi (5) Lab

MIC 162: General Virology (4)

PMI 128: Biology of Animal Viruses (3)

ENT 153: Medical Entomology(3 units) (3)

ENT 156: Biology of Parasitism (3)

ENT 156L: Biology of Parasitism Lab (1)

GDB 103: The Microbiome of People, Animals, and Plants (4)

Global Disease Biology Research:

All students will be required to complete a research project over 1 or 2 quarters during their senior year under the guidance of a faculty instructor. Projects may be lab or field-based research or a detailed review paper exploring a critical issue in global disease or health. Projects may be off campus with a non-UC Davis mentor, but students must also have an on campus faculty member as a co-mentor.

Restricted electives: (25)

Allow you to focus on an area of interest in global disease biology. Visit our website for a list of example courses that could be used to complete the elective requirements. Depending on your interests many other courses not listed could fill electives. The courses are grouped into broad areas only as examples; there would be no requirement to take a certain number of classes from each group.

**There are many programs at UC Davis that will provide
research and educational opportunities for Global
Disease Biology majors**

- One Health Institute
- I-One Health
- UC David Global Health
- Foods for Health Institute
- Center for Vector borne Disease
- Center for Produce Safety
- Western Institute for Food safety and security
- Foundation Plant Services
- CA&ES International programs
- Blum Center for Developing Economies
- John Muir Institute of the Environment
- California National Primate Research Center
- UC Davis Cancer Center

Potential Career options associated with this major include:

- Health Care including, but not limited to, veterinary medicine, human medicine, nursing, dentistry, optometry, pharmacy.
- Agriculture including industry, government policy (APHIS, USDA, CDFA), pest management, and graduate work in plant pathology.
- Research in pharmaceutical/biotechnology industry, government, non-profit, and university laboratories.
- Laboratory work in food/beverage industry, regulatory agencies (FDA, EPA), forensics laboratories, hospitals/clinics (Clinical Lab Scientists).
- Public Health: health education, health policy, health management, occupational safety and health, environmental health sciences, health communication, global health, health preparedness, epidemiology.
- Teaching (K - 12, colleges and universities, general public e.g., museums).
- Science writing/technical writing.
- For more options see UC Davis Internship and Career Center at: <http://icc.ucdavis.edu/>

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<http://globaldiseasebiologymajor.plantpathology.ucdavis.edu/welcome>