Course Development and Part-Time Instructor:

Microbiology and its Applications lab (50:120:212): Developed and adapted for online structure Summer 2020. This course is now planned to replace the old course content and will be run for all future semesters. This course teaches the importance of understanding the usefulness of proper hand-washing, aseptic technique, pure cultures, and proper handling of samples in a laboratory and clinical setting. This is an asynchronous course. Taught at least one section every semester since 2020.

General Microbiology Lab (50:120:331): Developed and adapted for online structure. This course examines the role of microorganisms in their interactions with their environment and the basic structure and characteristics of bacteria and other microbes. Microbial metabolism and its effects on their growth are used as techniques for identification, such as staining, microscopy, and growth media. Taught two sections in Spring 2021 with a total of 49 students.

Microbiology and its Applications Lecture (50:120:211): Developed and adapted for online structure. Structure and characteristics of bacteria, viruses, and fungi, with special emphasis on forms pathogenic for humans. Metabolism and genetics of microorganisms and principles of immunology; host-microbe interactions; pathogenesis of bacterial, fungal, and viral diseases and their medication. Designed primarily for students in the nursing and health sciences program. This is a three-credit lecture course. Taught one section in Fall 2021 to 54 students.

Teaching Assistant:

Gateway to Biology: Molecular Biology (Bio201L): This course aims to introduce the molecular basis for biology, specifically the Central Dogma of molecular biology, and to prepare you for further biological science studies. Exposes students to the core concepts of molecular biology in different ways to enrich their understanding of molecular biology. This lab allowed students to apply molecular concepts and quantitative skills learned in the lecture to techniques used in the lab to solve biological problems. The basic concepts and methods that underlie molecular cloning and DNA sequencing were taught, and students became familiar with some of the biology databases used for analyzing DNA sequences. Students accomplished this through a semester-long CURE project introducing the yeast model system Saccharomyces cerevisiae. Taught one section of students (12) in the Spring of 2022 and two (16 students each) in the Spring of 2023.

Genetics and Evolution (BIO 202L): Activities utilizing observations and experiments involving live organisms and computer-based models to study genetics and evolution topics discussed in the lecture. The emphasis is on problem-solving and exploring the topics in more depth. This lab incorporates a course-based undergraduate research experience (CURE). The goal is to introduce students to research, teach students how to think like a scientist and give students valuable experiences collaborating with classmates. There is a focus on teaching standard lab techniques in genetics and evolution and analyzing data obtained from the course project to evaluate further based on published literature. I led a lab class, grading, and office hours for the lab and associated lecture courses. Taught one section (16 students) in the Fall of 2021.

General Ecology (50:120:351): A study of the interrelations of organisms and their environments. Principles of growth, regulation, distribution, and structure; energetics of populations and communities explored. Taught half the course in the Fall of 2019 under the direction f Dr. Angelica Gonzalez (instructor). This is a two-day-a-week lecture class (1.5 hours a week). Each section will have a max of 30 students.

General Ecology Lab (50:120:353): Field and laboratory exercises illustrating general ecology concepts. Taught one section in the Fall of 2019. This is a once-a-week 3-hour lab class that includes hands-on activity learning, field trips, and a course-long project. Each section will have a max of 24 students.

General Microbiology Lab (50:120:331): Basic microbiological techniques for isolating, examining, and identifying bacteria, fungi, and viruses; experimental investigation of their characteristics. I taught in Fall of 2018. This is a once-a-week 3-hour lab class that includes hands-on activity learning. Each section has a max of 24 students. Taught one section in the Fall of 2018.

Clinical Aspects of Human Genetics (50:120:231): Principles of human heredity as applicable to nursing and allied health fields. Topics include patterns of inheritance, genetic aspects of health and disease, common genetic disorders and congenital disabilities, genetic testing, genetic counseling, gene therapy, pedigree analysis, and genomics. Case studies will be discussed extensively. Taught one section in the Summer of 2019. This asynchronous summer course involves case studies, discussion, and standard lecture material. Each section has a max of 30 students.

Microbiology and its Applications Lab (50:120:212): Structure and characteristics of bacteria, viruses, and fungi, with special emphasis on forms pathogenic for humans. Metabolism and genetics of microorganisms and principles of immunology; host-microbe interactions; pathogenesis of bacterial, fungal, and viral diseases and their medication. Designed primarily for students in the nursing and health sciences program. Taught two sections in Spring 2019, one in Fall 2019, and two in Spring 2020. This is a once-a-week 3-hour lab class that includes hands-on activities. Each section has a max of 24 students.

Guest Lecturing:

In the Spring Semester of 2020, I was invited to guest lecture in the undergraduate *General Microbiology course (50:120:330)*. This is an introductory course for ~100 students. I was asked to speak about best practices in microbiology laboratory techniques.