# COLLECTION DEVELOPMENT STATEMENT

# MICROBIOLOGY & MOLECULAR BIOLOGY (FUND 34275)

Greg Nelson

The library seeks to support teaching and research in Microbiology and Molecular Biology at the Research level.

## About the Department

The undergraduate program offers degrees in Microbiology, Molecular Biology and Medical Lab Science. Microbiology and Molecular Biology majors are prepared for graduate work or careers in many medical or health-related fields. Majors in Medical Lab Science are prepared for careers in diagnostic laboratories or other health care settings. All three majors provide excellent preparation for professional schools such as medical, dental or physical therapy school. Undergraduates in Microbiology and Molecular Biology actively use library resources for research projects; however, Medical Lab Science students do not have research projects and the only interaction with the library is during the Advanced Writing curricula.

The graduate program offers a Master’s of Science and Doctor of Philosophy degree in Microbiology and Molecular Biology. The programs prepare students to conduct high quality research in government, industry and educational institutions in areas such as immunology, cell biology and bacterial pathogenesis. A written thesis is required for all Master’s students and a written dissertation is required for all doctoral students.

## Formats

Overwhelmingly, Microbiology and Molecular Biology faculty and students use online databases and journal articles. Online journal article access is available through publisher packages, database subscriptions, and individual title management. Books are purchased mainly via the YBP approval plan. Three to four times a year faculty are provided with a list of new books from YBP slips and queried for firm order requests; very few firm order purchases are made without faculty request. Circulation rates are quite low for monographs. E-books are purchased where possible, to increase accessibility and use.

## Degree Programs and Collecting Levels

Bachelor of Science, Microbiology and Molecular Biology: Research Level

Master of Science, Microbiology and Molecular Biology: Research Level

Doctor of Philosophy, Microbiology and Molecular Biology: Research Level

## Research Interests

* Viral pathogens of human blood
* Humanization of animal models
* Bacteriophage
* Nuclear variant of BMP2 protein
* Gut microbial effects of human disease
* Statistical genetic analysis of complex diseases
* Automated extraction of phenotypes from electronic medical records
* Pathogen evolution
* Innate immune system
* Yersinia
* Genetic variation
* Symbiotic plant-microbe interactions
* Genetics
* Metabolic regulation
* Bacterial ecosystems in salty water
* Nanoinjection transgene delivery
* Chromatin architecture
* Nucleosome positioning
* Gene regulation
* Plant molecular biology
* Genetic markers of human anxiety and depression
* Mitochondrial diseases
* Cancer risk reduction with phytochemicals
* DNA repair mechanisms
* Early detection of cancer
* Pathogenic bacteria
* Select pathogenic agents
* Compounds used for decontamination, disinfection, and infection control
* T cell activation and memory cell formation to pathogens
* T cell receptor affinity
* Immune cell homing

## Subject Librarian Annual Collection Reports

2015

* **JoVE evaluation**. Evaluated the use of the Journal of Visualized Experiments (JoVE) and potential need for acquiring or cancelling sections.