

DAYLE BALMES

INTEGRATED SCIENCE
AMBASSADOR

3RD YEAR, MAJOR



THEME OF MY INTEGRATION:
Exploring the influence of
microbiology and genetics on
ocular diseases

SAMPLE CURRICULUM RATIONALE

MICB 306 - Molecular Virology

This course combines cell biology and virology and explores important concepts such as tropism and basic epidemiology. In 2020W1, the class investigated host-virus interactions in Influenza A, Dengue, Zika, and the SARS-CoV-2 viruses and the antivirals one can use against them. Many eye infections are viral and while most of them are not severe, this course helped me get a sense that there are some indirect-acting antivirals a patient can take to manage the infection.

MEDG 420 - Human Genomics and Medical Genetics

This course teaches the mechanisms of genetic disease/personalized medicine. The epigenomics portions of the course would help me apply my prior knowledge to the human body, and more specifically, ocular diseases. Many ocular diseases such as myopia which can lead to glaucoma and retinal detachment have a large genetic component, so I get to apply my knowledge of genetics when learning more about these diseases.

WHAT I AM INTEGRATING:

DISCIPLINE #1

Microbiology:

Having a biological and microbiological standpoint will let me assess ocular diseases at different angles. A microbiology background will help me understand common eye infections such as the pinkeye (conjunctivitis) because it is caused by bacterial or viral infections.

DISCIPLINE #2

Genetics:

Many serious ocular diseases are hereditary. A genetic background will come in handy when learning about eye diseases such as myopia, color blindness, and glaucoma.

CONTACT

daylebalmes@gmail.com