JASMIN MALHI

INTEGRATED SCIENCE AMBASSADOR

3RD YEAR, MAJOR

THEME OF MY INTEGRATION:

Genetic impact on disease phenotype and physiological response

Genetic differences among individuals can result in adverse physiological responses, and by integrating the disciplines of genetics and physiology, the goal is to gain an understanding of why some individuals and families are more susceptible to certain medical conditions and how the body responds to the abnormalities in the person's genome.

WHAT I AM INTEGRATING:

DISCIPLINE #1

Genetics:

Genetics can play a major role in determining our overall health and inheritance patterns can help us assess potential disorders or diseases that may be present in one's genotype. Certain genetic disorders occur are caused by abnormalities in our genome and can be passed on to future generations. Therefore, understanding the topic of genetics and inheritance can help us identify or diagnose diseases and pathology.

DISCIPLINE #2

Physiology:

The body's physiological response is a key indicator of disease or even minor complications. Learning about the various systems within our body can help strengthen the understanding of our body's normal mechanisms to isolate them from abnormal mechanisms.

SAMPLE CURRICULUM RATIONALE

BIOL 335 - Molecular Genetics

Taking this course will provide me with a strong foundation in molecular genetics to grasp a better understanding of gene structure, isolation, and identification in eukaryotes. This will tie into gene regulation which will be beneficial when considering the genetic makeup that could be a potential cause for autoimmune diseases. Identification of the genes that encode for certain diseases is important to further identify treatment and cure. This course is a fundamental step in learning about genetics and the development of disease-inducing genes in contrast with other wild types of the gene.

CAPS 422 - Mammalian Cardiovascular and Respiratory Physiology

Similar to CAPS 424, this course will provide me with an understanding of separate systems- cardiovascular and respiratory – which will provide me with knowledge about the control of cardo-pulmonary function in mammals. I believe that to understand how physiological functions are affected by genetics, it is important to understand physiological functions under normal conditions. This also ties into research with diseases such as diabetes, as over time, they can cause tissue and vein damage thus resulting in a compromised cardiovascular system.

CONTACT

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