

Integrative Health Science

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The World Health Administration defines health as "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity." I strongly believe that a true understanding of such a general subject requires knowledge of not only the intricate physical structure of the body itself but also the societal and cultural factors affecting that body. Health represents an overall pattern, the combination of many varying threads to create a complicated tapestry. The complexities and weaving patterns of the whole are demystified by the understanding of the role of each individual thread, only then does true understanding of the pattern emerge.

I wish to study health as it relates specifically to humans, encompassing economic and social factors as well as gaining an in depth understanding of the form and function of the human body. I initially studied physics and took anatomy on a whim. This revealed to me that the human form was a perfect subject through which I could combine my scientific interests in an immediately applicable way. As healthcare became a hot political issue, I began to examine the social and cultural determinants of health. I thought about majoring in Health, Society, and Policy, which combines social and anthropological views of health but I felt that I was missing a strong scientific understanding of how these social factors actually impacted health on a physical level. I also tentatively began to consider physical therapy as a vocation and no degree successfully encompassed the necessary course work. I want course work that allows for me to grasp not only the direct physical form and function of our body but also how these processes intertwine indirectly with social and psychological components to create human health. This will stretch the typical interdisciplinary approach even further by crossing the boundaries between the hard and soft sciences.

My degree fulfills all the pre-requisites for any Doctorate of Physical Therapy programs as well as preparing me adequately for acceptance to various graduate

programs in public healthcare, genetic counseling, and anatomy. As I continue to grow in my knowledge, I wish to ensure that I leave as many options as possible open for graduate studies in my areas of interest. I am confident that being allowed the opportunity to pursue study of subjects that I enjoy will allow for great success regardless of the graduate program that I eventually apply. By being well rounded as an undergraduate, I will have a greater number of experiences in a wide range of fields to draw from entering graduate school. I feel that an undergraduate degree should ultimately grant breadth of experience while graduate school will allow for honing of those experiences into specific focus.

My proposed degree has three main clusters:

1. **Human form and function** – to provide direct anatomical and physiological understanding of the body focusing on biology
2. **Genetics and scientific exploration** - to provide a science core that allows for deeper understanding of the general science and smaller scale genetic aspects of health
3. **Economics, culture, and psychology** - to provide a social science core in relation to health

Epigenetics is the study of *heritable* changes in gene expression caused by mechanisms other than changes in DNA. It refers to functionally relevant modifications to the genome that do not involve a change in the nucleotide sequence. Basically, how environmental factors can create imprints on DNA that affect expression. My proposed final project will focus on research conducted through interviews and independent study under the direction of my faculty advisor. Because it is a relatively new field of research, my advisor felt that it would be advantageous for me to then present my findings to an anatomy colloquium.

Major Emphasis Course

Code	Course Number	Course Title	Department	Credit hours
+	1210	Principles of Biology	BIOL	4.0
+	2325	Human Anatomy	BIOL	4.0
	5315	Advanced Human Anatomy	BIOL	3.0
	2420	Human Physiology	BIOL	3.0
	2420	Human Physiology Lab	BIOL	1.0
	3360	Vertebrate Embryology	BIOL	3.0
	3380	Evolutionary/physiological basis of health	BIOL	3.0
	5120	Gene Expression	BIOL	3.0
+	2210	Human Genetics	BIOL	3.0
	5140	Genome Biology	BIOL	3.0
+	1210	General Chemistry I	CHEM	4.0
+	1215	General Chemistry I Lab	CHEM	1.0
	1220	General Chemistry II	CHEM	4.0
	1225	General Chemistry II Lab	CHEM	1.0
+	1210	Calculus 1	MATH	3.0
	2010	General Physics I	PHYS	4.0
	2015	General Physics I Lab	PHYS	1.0
	2020	General Physics II	PHYS	4.0
	2025	General Physics II Lab	PHYS	1.0
	3670	Exercise: Health and Cultural Perspective	ESS	3.0
ip	3520	Bioethics	PHIL	3.0
ip	5190	Health Economics	ECON	3.0
	3620	Mathematics for Economists	ECON	3.0
	3640	Probability and Statistical Analysis	ECON	3.0
ip	1010	General Psychology	PSY	4.0
	3400	Psychology of Abnormal Behavior	PSY	3.0
	3460	Health Psychology	PSY	3.0
	3330	Behavioral Neurobiology	BIOL	3.0
	5001	Introduction to Gerontology	GERON	3.0
ip	4193	Medical Anthropology	ANTH	3.0
	(Upper-division)TBA	Independent Study	BIOL	3.0
	5321	Health Policy	POLS	3.0
Major Emphasis Credit: 93 Upper Division Credit: 51 4000+ courses: 21				

