Interdisciplinary Proposal:
Neurobiology

The nervous system is one of the most fascinating and complex structures known to man. It controls many diverse functions in an organism, ranging from breathing to decision-making. By studying the nervous system, we as humans have found out not only more about ourselves, but more about how the external world works as well. Advances just within the past twenty years in the field of neurobiology have yielded great insight into the function of the nervous system and have resulted in the development of many new tools to study the nervous system in more accuracy and precision.

The advances made in neurobiology have subsequently made it a popular topic of study by college students and laymen alike. The field of neurobiology is diverse. It includes, but is not limited to, fields such as developmental neurobiology, cognitive science, philosophy of mind, and systems neuroscience. As a result of its diversity, neurobiology is rich in career opportunities. By taking classes associated with this field of study, I hope to prepare myself for a graduate school which offers study in neurobiology and an eventual career in this field.

Currently, Hendrix does not have a neurobiology major. It has recently hired more professors associated with neurobiology, however, and there are plans to have a major in place for neuroscience the after I graduate, in 2017. After speaking with my advisor, Dr. Murray, I learned that most of the courses which would be taught in the neuroscience major are already in place, but the major lags behind in approval. This gave me the idea to change my major from BCMB, a major which does not entirely suit my interests, to an interdisciplinary major of neurobiology. Throughout my liberal arts education at Hendrix I have taken many science and philosophy courses associated with neuroscience in addition to my normal coursework for the BCMB major in anticipation for the neuroscience major being in place in the imminent future. With the addition of new courses in the field of neurobiology and with my background in both neuroscience and BCMB I have decided to propose an interdisciplinary major of neurobiology in order to gain further the skills I will need to succeed in graduate school and a future career.

It is my dream to have my own lab in which I will be able conduct my own research in neurobiology, and by allowing me to major in neurobiology I believe I will be better served in making that dream a reality. I therefore submit this proposal to you in hopes that you allow me to pursue an interdisciplinary major in neurobiology.

Interdisciplinary Studies
Supervisory Committee Members:

Dr. Richard Murray 

Dr. Mario Muscedere 

Dr. James Dow 

Interdisciplinary Neurobiology Major

Neurobiology is diverse, so the major must require a diverse course load. An interdisciplinary neurobiology major would require the following:

Required courses:

1) BIOL 150: Cell Biology
2) BIOL 250: Genetics
3) MATH 130: Calculus I
4) MATH 140: Calculus II
5) PHYS 210: General Physics I
6) PHIL 390: Philosophy of Mind
7) CHEM 240: Organic Chemistry I
8) CHEM 250: Organic Chemistry II
9) CHEM 330: Biochemistry
10) CHEM 335: Advanced Biochemistry
11) PSYC 360: Behavioral Neuroscience
12) BIOL 325: Cellular & Molecular Neuroscience
13) BIO 490: Advanced Topics: Systems Neuroscience
14) PHIL 490: Philosophy of Neuroscience

A research project (BCMB 498) that consists of:

1) Two semesters of research at Hendrix.
   OR
2) One Summer (minimum of 8 weeks at 40 hours/week) of research at Hendrix or another pre-approved summer research program.

Capstone experience

1) The capstone experience would consist of a literature review of a topic of interest by the student in the field of neurobiology. The review would be submitted to and graded by the student's major committee.
2) An oral presentation of the review would be given to the major committee which would be graded by them.
3) The final capstone grade would be the combination of these two grades.