

PROPOSED PROGRAM SUMMARY

Institution: Western Kentucky University
Program Name: Neuroscience
Degree Destination: Bachelor of Science

CIP Code: 26.1501

Credit Hours: 120

Implementation Date: 8/15/2024

Program Description

The proposed Neuroscience program at Western Kentucky University is an expansion of an existing Neuroscience track in the B.S. Psychological Sciences and an existing minor in Neuroscience. The vast majority of students within the Neurosciences track and the minor have stated that they would prefer a degree in Neuroscience. Students will have three tracks to choose from (Computational, Behavioral, and Systems).

The Systems track leads to graduate study in neuroscience or clinical psychopharmacology, or a career in the pharmaceutical industry, or serves as a pre-health professions option leading to a medical school application. The Behavioral track will facilitate study in cognitive neuroscience or psychiatry. Students in the Computational track will be prepared to find careers in artificial intelligence, medical data analytics, healthcare analytics, prosthetics, or robotics. As a strong natural science degree with a large “hands-on” component, the Neuroscience program will educate students to be lifelong innovators and problem-solvers.

As a result of this program, graduates will be able to:

- Develop and apply a working knowledge of the main content domains in neuroscience.
- Explain the scientific method of discovery, based on testing hypotheses by collecting and analyzing data in appropriately designed experiments.
- Propose, design, and run experiments, and analyze the data from these experiments.
- Embrace problem-solving and evaluate their role in finding solutions.

Connection to Other Programs

Western Kentucky University already offers a Neuroscience minor, as well as the Neuroscience track within the B.S. in Psychological Sciences. Enrollment in these offerings continue to grow and speaks to student demand. Many courses that will be included in the new Neuroscience program are already offered for the track and the minor. The program is strongly supported by Western Kentucky University faculty within the areas of biology, chemistry, psychological sciences, engineering, and computer science.

There are four neuroscience programs among public universities. Larger programs exist at the University of Louisville and the University of Kentucky, and these are focused on molecular and systems neuroscience. Smaller programs exist at Northern Kentucky University and Morehead State University. The strong student and employment demand, as well as curricular differences, demonstrate the viability of this program.

Student Demand

Initial estimates of enrollment are:

Year 1 – 24

Year 2 – 48

Year 3 – 72

Year 4 – 96

Year 5 – 96

Employment Demand

Western Kentucky University's Neuroscience program will prepare students for well-paying jobs in two of the most solid, expanding employment areas: medicine and artificial intelligence. The Neuroscience program is a rigorous science degree focusing on hands-on learning techniques related to problem solving, data analysis, and effective communication of findings. With an aging population, the field of health sciences will continue to be growth areas for well-paying jobs; the field of artificial intelligence will also continue to expand.

The top four occupational categories for neuroscience graduates are natural science managers, biochemists and biophysicists, biological scientists, and medical scientists (excluding epidemiologists). Employment can be found in areas performing high-level neuroscience research, in the private sector, government laboratories, or in academia.

Budget

Enrollment projections indicate that the new Neuroscience program will attract a number of new students in the first five years of the program, providing new tuition dollars to the university. Expenses for the proposed new program are related to reasonable start-up costs, including upgrades facilities and laboratory equipment. Minimal expenses for administrative support will be provided by existing employees.

Projected Revenue over Next Five Years (\$):	\$ 3,848,948
Projected Expenses over Next Five Years (\$):	\$ 1,331,630