



# B.S. in Behavioral Neuroscience

## Objectives

Our behavioral neuroscience major allows highly motivated students to gain an understanding of biology and psychology and ultimately integrate their knowledge of these fields so that they may discuss and analyze current topics in behavioral neuroscience. This will give students the ability to understand the neural basis of a range of psychological phenomena and behaviors. This major was designed by St. Bonaventure professors in the biology and psychology departments with the intention of creating a major for students with interests in both fields.

Students majoring in behavioral neuroscience at St. Bonaventure get to take advantage of small class sizes, at fewer than 30 students per class; and small laboratory sizes, with labs typically holding 12-16 students. Both classes and labs are taught by faculty rather than student assistants. Students who are interested in doing research may conduct a faculty-mentored research project relevant to the field of behavioral neuroscience. Upon completion of the behavioral neuroscience major at St. Bonaventure, students should be able to:

- understand how neurons function as cells and how they communicate with other neurons
- understand how the brain integrates information from the rest of the body and from the external environment
- explain and critique the range of methodologies, animal model systems, experimental designs, and statistical tools used in 21<sup>st</sup> century behavioral neuroscience

## Career Outlook

In recent decades, neuroscience has been a very popular field of study among biological disciplines. Eventual careers in nonprofits, social policy, science

writing, big data, or artificial intelligence are all possible with a degree in behavioral neuroscience.

Today's job market demands intellectual flexibility, with analytical skills as well as the ability to work together toward common goals. By ensuring a rigorous curriculum in both psychology and biology, as well as providing focus toward the brain in research contexts working with experts in the field, a degree in behavioral neuroscience is an exciting opportunity.

The behavioral neuroscience major provides a strong foundation for a wide variety of careers and graduate school opportunities. This is due to the interdisciplinary nature of this major that allows students to gain expertise in the fields of psychology and biology.

Therefore, all of the career and graduate school outcomes associated with those single degrees are available to behavioral neuroscience majors. These include careers in human service and social services, research technicians, animal research technicians, gaming and fish workers, data analysts and outreach and education.

Postgraduate opportunities such as medicine, psychotherapy, research, veterinary medicine, pharmacy, dentistry, physical and occupational therapy and physician assistant are all possible with a degree in behavioral neuroscience. A degree in behavioral neuroscience allows a student who truly embraces both disciplines to prepare for the exciting future in the field of neuroscience.

The vast majority of students pursuing a behavioral neuroscience major will be interested in graduate studies either in the healthcare professions (e.g., M.D., P.A.) or M.S. or Ph.D. programs in a research



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field such as neuroscience, neurobiology, biopsychology, or biology. Some courses that are prerequisites for medical school and other healthcare professions graduate programs are included in this major, and it is sized such that a student will be able to complete other potential prerequisite courses in chemistry and physics while graduating within four years.

## Curriculum

Coursework emphasizes an understanding of the nervous system at a cellular level, how the brain integrates information, as well as an understanding of a range of methodologies, animal models systems, experimental designs, and statistical tools used in 21st century behavioral neuroscience.

## Degree Requirements

The behavioral neuroscience major naturally overlaps to some extent with our existing psychology and biology majors. By combining coursework in psychology and biology in roughly equal measure, and with a specific emphasis on the brain and behavior, behavioral neuroscience offers students a clear alternative to either of those other majors — an alternative that will particularly appeal to students who like both subjects and would like to combine coursework in both, as well as for students who have identified a specific interest in neuroscience.

### Biology Courses:

- BIO/L 105. Biological Science I
- BIO/L 106. Biological Science II
- BIO 350. Neurobiology

### Psychology Courses:

- PSYC 101. An Introduction to Psychology
- PSYC 102. An Introduction to Biopsychology

- PSYC/L 201. Psychological Research: Methods and Statistics I
- PSYC/L 202. Psychological Research: Methods and Statistics II
- PSYC 343. Physiological Psychology

## Behavioral Neuroscience Electives

*You must take 18 credits of major electives: choose at least one and no more than three total courses in each elective area:*

### Cellular Mechanisms

- BIO 291. Genetics
- BIO 292. Cell Biology
- BIO 472. Immunology
- BIO 494. Genomics

### Evolutionary Developmental Biology

- PSYC 315. Animal Behavior
- BIO 362. Animal Development
- BIO 390. Evolution

### Behavior and Mental Processes

- PSYC 215. Maladaptive Behavior
- PSYC 316. Human Sexuality
- PSYC 330. Health Psychology
- PSYC 421. Sensation and Perception
- PSYC 422. Cognition

Behavioral neuroscience majors must also complete a course on quantitative reasoning, complete a foreign language to the 202 level or higher, and fulfill the core area courses required of all SBU students.