

## BEHAVIORAL NEUROSCIENCE – General Info

### What is Behavioral Neuroscience?

Behavioral Neuroscience is the study of the biology of behavior. It focuses on the behavioral, neural, and physiological processes involved in perception, learning, memory, cognition, motivation, and emotion. Behavioral neuroscientists study the brain in relation to behavior, its evolution, development, functions, abnormalities, and repair, as well as interactions with the immune system, cardiovascular system, endocrine systems, and energy regulation systems.

### What kinds of classes do I need to take?

You will need to take some basic science, math, and computer programming classes to gain a background in methods of scientific inquiry and analytic skills. Topics in behavioral neuroscience (e.g., relationships between behavior and the brain, hormones, or drugs) may be introduced in lower level elective classes offered by Psychology, Biology, or Neuroscience departments. Advanced courses will train you in research techniques and offer in-depth study of specific behavioral neuroscience topics that examine the complex relationships between behavior, the brain and neurochemical systems. Advanced coursework in cell biology and chemistry, e.g. organic chemistry and biochemistry, also is highly recommended.

### What other preparation will I need?

It is recommended that you receive research experience while you are an undergraduate. This may be obtained in a variety of ways, including working with a faculty member as a research assistant in his or her laboratory.

### Do I have to go to graduate school?

Most individuals interested in Behavioral Neuroscience eventually choose to pursue independent research within a focused area of interest. To conduct research of this nature, the training that a Ph.D. degree provides is typically necessary.

### What can I do with a bachelor's degree in Behavioral Neuroscience?

A bachelor's degree with a concentration in Behavioral Neuroscience prepares you well for application to graduate programs within a broad array of fields, including behavioral neuroscience, psychology, biology, animal behavior, medicine, clinical neuropsychology, and general neuroscience. If you choose not to go to graduate school, a bachelor's degree in Behavioral Neuroscience would be excellent preparation for such diverse careers ranging from a laboratory research assistant to a pharmaceutical representative.

### What can I do with a graduate degree in Behavioral Neuroscience?

**M.S.:** With a master's degree, you would be able to assist another scientist in running the day-to-day operations within his or her laboratory. A master's degree would provide you with advanced research skills beyond the bachelor's degree. Some community colleges employ master's-level persons in teaching positions, as do many pharmaceutical laboratories.

**Ph.D.:** A doctoral degree in behavioral neuroscience would prepare you to conduct your own research program. With a Ph.D., you would be generating work that is relevant to the overall understanding of how the physiology of the brain contributes to human behavior and well-being. In addition, a Ph.D. prepares you to train others to do research in your field.

### Where can I learn more?

Below is a list of web sites that describe various aspects of neuroscience. An introductory course in behavioral neuroscience would also provide you with an overview of the field. You may wish to speak to a faculty member engaged in behavioral neuroscience research or teaching. Look up faculty members' research on the Internet and read their published work to see what kinds of scientific questions interest them.

Neuroscience in the News: <http://web.sfn.org/index.cfm?pagename=neuroscienceInTheNews>

American Psychological Association: <http://www.apa.org/divisions/div6/>

The journal, *Behavioral Neuroscience*: <http://www.apa.org/journals/bne/>

Brain Connections: <http://brainconnection.com/>

Comparative Brain Collection: <http://www.brainmuseum.org/>

Foundation for Biomedical Research: <http://www.fbresearch.org/>

## BEHAVIORAL NEUROSCIENCE (BNS) AT WRIGHT STATE UNIVERSITY

<http://www.psych.wright.edu/undergraduateprogram/bnsconcentration.htm>

### How do I get a degree in Behavioral Neuroscience at WSU?

There is no major in behavioral neuroscience at WSU. However, a Bachelor's of Science (B.S.) degree in Psychology with a concentration in Behavioral Neuroscience is currently available in the Department of Psychology at Wright State. The courses that students are required to take are described below (see "What classes..." below). The concentration will appear on your academic transcript.

### How do I apply for a concentration in Behavioral Neuroscience?

Although you do not apply for this concentration until 96 hours of coursework are completed, it is best if several of the required courses are taken in the first two years of study. Obtain program information and course guidelines from the WSU Psychology Undergraduate Program Office (Fawcett 342) as soon as possible.

You may apply for a concentration in behavioral neuroscience by filling out an application form available at the WSU Psychology Undergraduate Program (PUP) office in Fawcett 342 or at our website, noted above. If you do not qualify immediately, please let someone in the PUP office know of your interest so that you may be added to a list of students who are interested in behavioral neuroscience and who intend to work on meeting the eligibility criteria. We will keep you abreast of any changes and developments with the concentration.

Admission criteria are: (1) completion of 96 hours of coursework, including PSY 391 (2) an *overall* GPA at WSU of 3.2, (3) declaration of psychology as your major, and (4) completion of an application form. Applications are processed around the 8<sup>th</sup> week of each quarter. Students will be notified upon admittance. Although the concentration is only open to psychology majors, any student may take the listed courses provided they have the necessary prerequisites.

PLEASE NOTE: For the BNS notation to remain on your transcript at time of graduation, you are required to: (1) complete the required courses AND (2) maintain a *Psychology* GPA of 3.2.

### What classes does WSU require?

The WSU PUP office (Fawcett 342) has sample programs of study and checklists that will help you plan which courses to take. In addition to essential courses in basic science, math, statistics, and computer programming, you will take several of the behavioral neuroscience-relevant courses offered in the Department of Psychology. These courses include our 3-course behavioral neuroscience series (Behavioral Neuroscience I & II and Advanced Methods), lower level electives that introduce you to particular specialty areas in behavioral neuroscience (e.g., Hormones & Behavior, Drugs & Behavior), and upper level electives (PSY 487s) that will expose to you the breadth of the field and provide you with opportunities to explore areas of your interest in greater detail (e.g., Animal Behavior, Clinical Neuroscience, Human Behavioral Endocrinology, Psychobiology of Stress, Behavioral Neuroscience Education).

### How do I get research experience at WSU?

It is recommended that you participate in research during your tenure at WSU. You may do this by working as a student employee, or for credit, with a faculty member engaged in behavioral neuroscience research or by gaining research experience with other faculty, in other departments, or other lab settings. Additionally, one-on-one independent study courses or an honors project may be developed in conjunction with a faculty member according to your specific interests. Working as a research assistant or doing an Independent project depends on the availability of positions as well as your GPA, coursework completed, project needs, and your own schedule. See an advisor for referral to potential mentors.

### Who are the faculty members that teach Behavioral Neuroscience courses?

Core faculty include Dr. Claflin, Dr. Hennessy, and Dr. Schiml-Webb, although a number of other faculty within the Department of Psychology have related interests. More information about specific research interests of the faculty is described on the department website: [www.psych.wright.edu](http://www.psych.wright.edu).