School of Behavioral and Brain Sciences

Doctoral Programs in Cognition and Neuroscience; Speech, Language and Hearing Sciences; Psychology

Objectives

The School of Behavioral and Brain Sciences offers doctoral programs in Cognition and Neuroscience, Speech, Language and Hearing Sciences, and Psychology. Each provides preparation in basic and applied aspects of behavioral and brain sciences. The faculty consists of specialists in developmental psychology, social/personality psychology, cognitive science, neuroscience, molecular neurobiology, cognitive neuroscience, and communication sciences and disorders. Students may specialize in these areas or pursue study across areas as in the study of child language, aging, perception, and behavioral and neural plasticity. Core and specialized courses provide the foundation for advanced seminars and a wide spectrum of doctoral research in laboratories, schools, and clinics. Frequent colloquia and informal brown-bag seminars contribute to a stimulating environment for scholarly development.

Cognition and Neuroscience

The flexible, non-traditional doctoral program in Cognition and Neuroscience provides novel opportunities for multidisciplinary and cross-disciplinary studies in the areas of perception, memory, attention and executive processing, cognitive neuroscience, cellular and systems neuroscience, cortical plasticity, and computational modeling of cognitive and neural processes. Close liaison with the UT Southwestern Medical Center provides access to first-class neuroimaging technologies and research populations.

Students pursuing research in this program have the option of developing, in consultation with their doctoral advisor, a unique training program tailored to their specific research interests. Most students pursue their studies in one of two tracks.

The Cognitive Neuroscience track includes research in human psychology, including memory, perception, music and addiction. It is centered in our Department of Psychology and utilizes human neuroimaging tools such as MRI, EEG and PET. New students are directly admitted to a single research laboratory.

The Systems and Cellular Neuroscience track focuses on neurobiological approaches in neuroscience, including molecular, cellular, and systems approaches in animal models and humans. Research foci include learning and memory, stress, addiction and pain. It is centered in our Department of Neuroscience. New students can rotate through multiple research laboratories or directly join a single laboratory.

Speech, Language and Hearing Sciences

The doctoral program in Speech, Language and Hearing Sciences provides opportunities for graduate
study and research in the areas of speech, language, and hearing science, and in the disorders that affect speech, language, and hearing. Students have available a wealth of research opportunities in laboratories, clinics, and schools, both on-campus and in the community. Close liaison with the UT Southwestern Medical Center provides patient access and numerous opportunities for research in medical settings. Coursework and research options within the doctoral programs in Psychology and Cognition and Neuroscience allow students to pursue interdisciplinary study in areas such as neuroimaging of language processes, child language, autism, neural plasticity and recovery, speech perception, auditory neuroscience, and cognitive aging.

**Psychology**

The doctoral program in Psychology provides opportunities for graduate study and research in experimental psychology. The program offers strong interdisciplinary linkages to other areas within the School of Behavioral and Brain Sciences, including cognitive neuroscience, behavioral neuroscience, and communication sciences and disorders. The primary goal of the program is to prepare productive scientists for scholarly work in academic or applied settings. Students work closely with one or more faculty members in a collegial mentoring relationship. Although all students complete a core curriculum comprised of coursework in Developmental, Cognitive, and Social/Personality Psychology, the program allows students to individually tailor their studies in creative ways.

**Facilities**

The offices and research facilities of the School of Behavioral and Brain Sciences are located on the Richardson campus, and off-campus at the Callier Center for Communication Disorders-Dallas, the Center for BrainHealth, and the Center for Vital Longevity, which are adjacent to the campus of the UT Southwestern Medical Center at Dallas. Facilities on the Richardson campus include teaching and research laboratories for neuroscience, cognitive science, and facilities for the study of child development. The Center for Children and Families and Callier-Richardson provide a variety of clinical services to the community and serve as a research sites for graduate students.

The Center for BrainHealth and the Center for Vital Longevity are the primary facilities for the study of cognitive neuroscience. The Center for BrainHealth includes research activities in the areas of aging and neurogenic disorders in children and adults. The Callier Center-Dallas has its primary focus on speech, language, and hearing, and includes research laboratories, clinical services, and classroom programs for preschool children. The Center for Vital Longevity includes research on how the body and mind can successfully age together and uses cutting-edge brain imaging technologies and advances in cognitive science to identify the "neural signature" of those at risk of not aging well and preventing problems before symptoms occur. Collaborative arrangements with the UT Southwestern Medical Center expand student research opportunities including access to its clinical populations and neuroimaging facilities. The Center for Children and Families, housed in the School for Behavioral and Brain Sciences, offers an array of clinical and community outreach activities organized around three initiatives: parenting healthy families, strengthening interpersonal relationships, and enhancing thinking and learning.

**Admission Requirements**

The University's general admission requirements are discussed on the [Graduate Admission](https://catalog.utdallas.edu/2022/graduate/programs/bbs/doctoral-programs) page.

Admission to a doctoral program is based on a review of the applicant's transcripts, GRE scores, 3 letters
of recommendation, and narrative description of research interests and career goals. In addition to academic requirements, the admissions committee weighs heavily the match between the applicant's research interests and the research areas available to students in the school. For information about faculty research interests, see our web pages at bbs.utdallas.edu.

Applications for admission are due December 1. Students are accepted for the Fall semester only. Some courses in the graduate programs in Audiology, Applied Cognition and Neuroscience, Human Development and Early Childhood Disorders, Psychology, and Speech, Language and Hearing Sciences complement doctoral coursework and, upon a student's admission to the PhD program, can be applied toward the degree. Students should consult with the doctoral program head to determine which graduate courses can be applied to the PhD.

**Combining a Clinical Master's (MS) or Doctorate (AuD) with the PhD**

*39 semester credit hours minimum in the chosen PhD program*

Students seeking clinical certification from the American Speech-Language-Hearing Association in Speech-Language Pathology or Audiology, in addition to the PhD, may combine the master's program in Speech-Language Pathology or doctoral program in Audiology with the PhD programs in Speech, Language and Hearing Sciences, Cognition and Neuroscience, or Psychology. An individualized plan of study leads to both degrees. Students are separately admitted to each program and admission to one program does not assure admission to the other. A minimum of 39 semester credit hours in the chosen PhD program must be taken in addition to the minimum credit hour requirements for the MS or AuD degrees.

**Degree Requirements**

The University's general degree requirements are discussed on the [Graduate Policies and Procedures](https://catalog.utdallas.edu/2022/graduate/programs/bbs/doctoral-programs) page.

Students seeking the Doctor of Philosophy degree must complete 75 graduate semester credit hours.

**Doctor of Philosophy in Cognition and Neuroscience**

*75 semester credit hours minimum beyond the baccalaureate degree*

**Faculty**

**Professors:** Hervé Abdi, Peter F. Assmann, Sandra B. Chapman, W. Jay Dowling, Gregory Dussor, Julia Evans, Francesca Filbey, Richard M. Golden, John Hart Jr., Michael P. Kilgard, Daniel Krawczyk, Aage R. Møller, Alice J. O'Toole, Denise C. Park, Theodore Price, Robert L. Rennaker II, Michael D. Rugg, Bart Rypma, Steven Small, Ana Solodkin

**Associate Professors:** Chandramallika Basak, Kristen Kennedy, Benedict Kolber, Sven Kroener, Mandy J. Maguire, Christa McIntyre Rodriguez, Karen Rodrigue, Lucien (Tres) Thompson, Gagan Wig

**Assistant Professors:** Michael Burton, Crystal Engineer, Bo Kyung Park, Millie Rincon-Cortes, Kendra
Coursework

Cognitive Neuroscience track

Students with research interests in **Cognition or Cognitive Neuroscience** will be entered into the "Cognitive Neuroscience" track and are required to take the following courses:

**Doctoral Proseminar: 3 semester credit hours**

- **HCS 6302** Issues in Behavioral and Brain Sciences

**Research Methods: 6 semester credit hours minimum**

- **HCS 6312** Research Methods in Behavioral and Brain Sciences - Part I
- **HCS 6313** Research Methods in Behavioral and Brain Sciences - Part II

Students who have completed courses equivalent to **HCS 6312** and/or **HCS 6313** or whose prior graduate studies had a strong quantitative focus may, with the approval of the advisor and Area Head, waive **HCS 6312** and/or **HCS 6313**.

**Cognition and Neuroscience Core Courses: 6 semester credit hours minimum**

Students must take a minimum of one Cognition Core and one Neuroscience Core, choosing from those listed below.

**Cognition**

- **HCS 6330** Cognitive Science
- **HCS 6395** Cognitive Psychology

**Neuroscience**

- **HCS 6338** Functional Neuroanatomy
- **HCS 6346** Systems Neuroscience

**Advanced Electives: 9 semester credit hours minimum**

In addition to completing the 6 semester credit hours core requirement, students take a minimum of 9 semester credit hours of advanced electives. Any HCS course may count as an advanced elective.

This includes core courses (see above), though no course can be counted both as a core and an advanced elective for any single student. Advanced electives are selected by students with the concurrence of their research advisors based on the students’ research foci. Depending on a student’s background and research, additional advanced electives beyond the 9 semester credit hours minimum may be necessary.

Systems and Cellular Neuroscience track
Students with research interests in Systems and Cellular Neuroscience will be enrolled in the "Systems and Cellular Neuroscience" track and are required to take the following courses:

**Doctoral Proseminar: 3 semester credit hours**

- **HCS 6302** Issues in Behavioral and Brain Sciences

**Research Methods: 6 semester credit hours minimum**

- **HCS 6342** Research Methods and Professional Development in Neuroscience
- **HCS 6315** Scientific and Grant Writing

**Cognition and Neuroscience Core Courses: 12 semester credit hours minimum**

**Neuroscience**

- **HCS 6340** Cellular Neuroscience
- **HCS 6346** Systems Neuroscience
- **HCS 7343** Neuropharmacology

**Cognition**

Choose one course from the following:

- **HCS 6330** Cognitive Science
- **HCS 6395** Cognitive Psychology

Other approved course in Cognition or Cognitive Neuroscience

**Advanced Electives: 3 semester credit hours minimum**

In addition to completing the 12 semester credit hours core requirement, students take a minimum of 3 semester credit hours of advanced electives. Any HCS course may count as an advanced elective. Other courses may be counted as advanced electives with approval from the graduate program head.

This includes core courses (see above), though no course can be counted both as a core and an advanced elective for any single student. Advanced electives are selected by students with the concurrence of their research advisors based on the students' research foci. Depending on a student's background and research, additional advanced electives beyond the 3 semester credit hours minimum may be necessary.

**Doctor of Philosophy in Speech, Language and Hearing Sciences**

*75 semester credit hours minimum beyond the baccalaureate degree*

**Faculty**

**Professors:** Sandra B. Chapman, Julia Evans, Lisa Goffman, John Hart Jr., William F. Katz, Colleen G.
Coursework

Doctoral Proseminar: 3 semester credit hours

**HCS 6302** Issues in Behavioral and Brain Sciences

Research Methods: 9 semester credit hours minimum

**HCS 6312** Research Methods in Behavioral and Brain Sciences - Part I

**HCS 6313** Research Methods in Behavioral and Brain Sciences - Part II

One advanced level research methods or statistics course, or other approved course designed to enhance the student's research skills

Students who have completed courses equivalent to **HCS 6312** and/or **HCS 6313** or whose prior graduate studies had a strong quantitative focus may, with the approval of the advisor and Program Head, waive **HCS 6312** and/or **HCS 6313**.

Major Core Courses: 6 semester credit hours minimum

**HCS 7324** Seminar in Language Science

**HCS 7325** Seminar in Speech Science

**HCS 7326** Seminar in Hearing Science

Students must complete a minimum of 6 semester credit hours of approved courses in the area of speech, language, and hearing sciences. Courses meeting this requirement will vary depending on the student's research interests. The requirement may be waived for students holding a graduate degree in the field of speech-language pathology or audiology or a related area, and for students who have completed courses equivalent to **HCS 7324**, **HCS 7325**, and/or **HCS 7326**, with the approval of the advisor and Program Head. Students lacking an adequate foundation in communication sciences may be required to complete more than the 6 semester credit hours minimum of core coursework.

Supplemental Coursework: 12 semester credit hours minimum

All students must complete an additional minimum of 12 semester credit hours of doctoral level courses and seminars. Courses may be selected from coursework offered through the PhD programs in Speech, Language and Hearing Sciences, Cognition and Neuroscience, or Psychology. Courses used to meet this requirement taken outside of the School of Behavioral and Brain Sciences require approval of the
Doctor of Philosophy in Psychology

75 semester credit hours minimum beyond the baccalaureate degree

Faculty

Professors: Hervé Abdi, Peter F. Assmann, W. Jay Dowling, Francesca Filbey, Richard M. Golden, Daniel Krawczyk, Alice J. O'Toole, Margaret Tresch Owen, Denise C. Park, Amy Pinkham, Pamela R. Rollins, Michael D. Rugg, Noah J. Sasson, Melanie J. Spence

Associate Professors: Robert Ackerman, Chandramallika Basak, Shayla C. Holub, Kristen Kennedy, Mandy J. Maguire, Candice M. Mills, Jackie Nelson, Karen Rodrigue, Andrea Warner-Czyz, Gagan Wig

Assistant Professors: Heidi Kane, Bo Kyung Park, Jiyoung Park, Kendra Seaman, Meghan Swanson

UT Dallas Affiliated Faculty: Karen J. Prager

Coursework

Professional Development: 3 semester credit hours

HCS 6302 Issues in Behavioral and Brain Sciences

Research Methods: 9 semester credit hours minimum

HCS 6312 Research Methods in Behavioral and Brain Sciences - Part I
HCS 6313 Research Methods in Behavioral and Brain Sciences - Part II
HCS 6317 Research Methods in Psychology

Students who have completed courses equivalent to HCS 6312 and/or HCS 6313 or whose prior graduate studies had a strong quantitative focus may, with the approval of the advisor and Area Head, waive HCS 6312 and/or HCS 6313.

Psychological Science Core Courses: 12 semester credit hours minimum

Students will declare a concentration in Developmental Psychology, Cognitive Psychology, or Social/Personality Psychology. Students must take four core courses from those listed below or approved substitutes. Two of these courses must be selected from the concentration, and the four courses must be selected from at least two of the four areas listed.

Developmental Psychology

HCS 6331 Cognitive Development
Advanced Electives: 9 semester credit hours minimum

In addition to completing the 12 semester credit hours of core requirements, students will take an additional 9 semester credit hours of advanced electives. Any core course (see above) may count as an advanced elective, though it cannot count both as a core course and as an elective. One of these 3 semester credit hour elective courses must be an advanced research methods course.

Students may enroll in other advanced electives from the other doctoral course offerings available in the school, including courses in language and communication. Additional advanced electives are available each semester.

Additional Requirements (All PhD Programs)

All students must complete the Qualifying Project/Qualifying Paper requirements of the PhD degree sought. The successful defense of a written dissertation completes the requirements for the degree.