

Cognitive Psychology PhD Program Student Handbook

Department of Psychology
University at Buffalo
The State University of New York

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About the Program

The Cognitive Psychology Doctoral Program offers an exceptional, research-intensive training environment for students interested in understanding how the mind works. Program faculty are nationally and internationally known for innovative research on speech and language perception and development, word recognition and lexical access, animal cognition, auditory perception, music cognition, categorization, learning, and motor control.

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The Learning Environment

Well-equipped laboratories, a large participant base, a collegial and supportive atmosphere and the opportunity to train with more than one faculty member afford our graduate students with outstanding and flexible research opportunities. Faculty laboratories provide opportunities to work with EEG, Eye tracking, EMG, motion capture, and animal psychophysics.

Students progress in the PhD program through a combination of mentored research activities (with their primary advisor as well as other faculty members), individualized course work, opportunities for acquiring new methodological and quantitative skills, research colloquia and teaching opportunities.

You should obtain a copy of the Department of Psychology's Graduate Student Manual, which includes information on matters not discussed in this Cognitive Psychology Manual, including procedures and deadlines for becoming a doctoral candidate, steps to follow in completing the dissertation, policies on assistantships, registration, transfer of credits, incompletes, grievance procedures, etc.

Program Requirements and Curriculum

The following serves as a guide for students to complete the **Cognitive Psychology Doctoral Program** successfully. These include:

- A minimum of **72 credit hours**, including core cognitive coursework, electives, and departmental breadth requirements.
- Completion of a pre-dissertation project with your primary advisor. The pre-dissertation project culminates in a written report of a publishable-quality empirical project.
- Completion of a qualifying project with a mentor other than your primary advisor. The project must be a publishable-quality empirical or computational project.
- Yearly presentation of ongoing research in the cognitive area's BrownBag talk series.
- Doctoral dissertation and oral defense of the dissertation.

Faculty Mentorship and Supervision

Our program fosters collegial and intellectually stimulating interactions between students and faculty in order to prepare students to become the next generation of cognitive scientists. The graduate student's primary faculty contact is with their mentor; however, our program is designed to facilitate interaction with a broad range of faculty members outside classes. Students form an **Individualized Mentoring Committee** in the first year, which is a committee of three faculty members they meet with each year. In addition, students complete a **Qualifying Project**, which is mentored by a faculty member other than the primary advisor. Students present their research ideas and findings to the faculty and other students yearly in the brownbag colloquium. Students will work with their mentors and other committee members to publish the results from their projects in peer-reviewed scientific journals.

IMC Committee

In the first semester of the program, each student should form an Individualized Mentoring Committee (IMC). This committee should include the student's advisor/mentor plus two other individuals. One of those individuals must be a core member of the Cognitive Area faculty. The other can be anyone in the field of Cognitive Psychology from UB or elsewhere. The makeup of the student's committee should be sent to the area head by the end of the first semester of the program. Any changes should also be sent to the area head. Students are responsible for setting up the IMC committee meetings each year. During the meetings, students typically propose the pre-dissertation project and/or the qualifying project, and overall progress (e.g., courses, lab, TA, etc.) is discussed and evaluated by the committee. Once a student finishes their QP and pre-dissertation projects and they advance to candidacy, the IMCs are dissolved.

Pre-Dissertation Project and Qualifying Projects

The pre-dissertation and qualifying projects should be completed by all Cog PhD students by the end of the third year in the program at the latest. There is no standard order for completing the two projects – some students do one and then the other, others do both simultaneously. The projects should be proposed to and approved by the IMC before the data collection process takes place. The proposals

should include both a short, written description of the project approved by the mentor and then sent to the IMC at least 48 hours before the IMC meeting, and a brief (20 min) presentation on the project at that IMC meeting. Once approved by the committee, data collection can commence. Committees may suggest minor or major changes to the proposed projects, so it is not advised to collect data before the proposal meetings. Once completed, the students will write up publishable-quality manuscripts for each project and defend the projects orally. Once the write-ups are approved by the advisor, they should be sent to the committee for their comments/suggestions. Committees can approve the write-ups as is, or they can require changes before giving their approval. The students can orally defend the project either in the yearly brownbag seminar or during a separate IMC meeting. The former is preferred. The student should notify the IMC committee that the brownbag is serving as the oral defense so that all members will attend. The committee usually notifies the students after the seminar that they approve of the oral defense. If not, the students should email the committee asking if their oral defense was approved. If it is not sufficient, the members should consult with each other until determining an action that will satisfy the oral defense (e.g., a later meeting of the student and committee). Once the written and oral components of each project are successfully defended, the students are considered ABD (all but dissertation) and can apply for candidacy.

Doctoral Dissertation

The Ph.D dissertation must be a major piece of research that is grounded in clear and meaningful psychological theory and is a thoughtful, integrated, and original research effort. The dissertation should address a substantive research problem in psychology. The dissertation research will be guided and evaluated by a faculty committee selected by the student, in consultation with the advisor, and approved by the Cognitive Area head. The rules of the composition of the dissertation committee are laid out in detail in the Department of Psychology Graduate Student Manual. Briefly, the chair of the committee should be a core member of the Cognitive Area of the Psychology Department. One member must be outside of the Cognitive Area. The other two members should be either core or affiliated members of the Cognitive Area. Students should consult with the grad student manual and the website for the Office of the Graduate School for forms, deadlines, and rules concerning all aspects of the dissertation process.

Coursework

All students are required to take Advanced Statistical Methods I and II (PSY607 and PSY608), preferably in their first year of the program. In addition, students are required to take distribution courses in Cognitive Psychology and 2/4 of the other graduate training programs in Psychology: Behavioral, Clinical, and Social-Personality. Options for those distribution courses are starred here: [Graduate Courses - Department of Psychology - University at Buffalo](#). Students should take PSY698 Teaching Psychology within their first three years of the program (this course is taught every other year, so students should plan accordingly). The rest of the credits taken by each student will consist of other classes in the Psychology Department but can also come from various departments at UB, including: Anthropology, Biological Sciences, Biostatistics, Communication, Communicative Disorders and Sciences, Computer Science, Learning and Instruction, Linguistics, Neuroscience, and others. Students should tailor their courses to their own interests with their advisor's approval. Students should follow the Psychology Student Manual for information about research credits and maintaining full time status.

TA/Teaching

Students funded via a graduate training state line will serve as a teaching assistant for their first three years in the program. They must follow all of the rules set out by the Director of Graduate Studies for these positions, including proctoring exams. In the fourth year of the program, students will teach a course in one semester and have one semester off. Students should work with their mentors to decide a list of classes that might be appropriate for them to teach. In the fifth year, students have the choice to return to TAing or to teach another class.

Ethics, Diversity, and Professional Development

Consistent with guidelines outlined by the American Psychological Association Ethical Principles of Psychologists and Code of Conduct (APA, 2002), we view a solid understanding of ethical and diversity issues affecting the practice of psychology to be an essential foundation of your training. Accordingly, we have developed a curriculum that will provide you with training in these issues as they may present in all aspects of your future role as a scientist and practitioner. We have adopted an infusion model. Thus, ethical and diversity issues relevant to various course content areas are represented throughout your training curriculum in class assignments, readings, and topical discussions. In this training curriculum, diversity is defined inclusively, limited not only to ethnic diversity, but to the myriad ways in which individual characteristics or group membership may define individuals or societies. Such influences include but are not limited to culture, sex, ethnicity, age, religion, socioeconomic status, sexual orientation, and learning, developmental and physical disabilities. Students are expected to develop an understanding of the diversity and ethical issues underlying professional and scientific responsibility and integrity.

As a critical part of your professional development, we expect you to increase your knowledge of, and sensitivity to, issues surrounding the responsible conduct of research with human and animal subjects and gain an understanding and knowledge of the federal regulations and guidelines that apply to research. Consequently, you must complete the web-based training in human subjects' protection and research ethics offered by the Collaborative Institutional Training Initiative (CITI; <https://www.citiprogram.org>). At a minimum, you must receive a score of 80% or higher on each of 11 training modules of the Social & Behavioral Research Investigators course to successfully complete the CITI training. You will also have to successfully complete additional training modules available on the CITI web site that are specific to human and/or animal research regulations and practices at the University at Buffalo. Depending on the research in which you are involved, you may have to complete additional modules on the CITI web site. You should consult with your advisor regarding additional training available through CITI and elsewhere.

We in the Cognitive Area of Psychology take professional development for our students very seriously. We are training you to be successful scientists. We also have expectations for your performance. We expect you to meet deadlines set forth by the program. We expect you to participate in professional activities at the Department, University, community, and/or professional levels. This can be demonstrated in a variety of ways, including involvement in professional organizations; membership on Department, University, or professional organization committees; participation in manuscript review activities; presentations; publications; grant writing; and teaching.

From the day you start graduate school it is important to realize that you are now a professional. As a professional, much more is expected of you. Your mentorship relationship with your academic advisor involves a commitment to be an active part of his or her research laboratory. Your graduate classes and seminars are very important. The expectation is that you will attend all of your classes unless illness or an unavoidable professional conflict interferes with attendance. Deadlines are a constant fact of life for professionals, and they must be dealt with effectively. Waiting until the deadline is nearly here before beginning a project never works at a graduate level, where much more is expected than probably has ever been expected of you before. As part of your graduate training, we require all students to have experience teaching. You will also be called on to help with the general functioning of the department (e.g., all students are expected to proctor exams on occasions). Although there is very little learning involved in proctoring, your willingness to shoulder your fair share of the responsibility will definitely be noticed by the faculty.

Cognitive Area Brown Bags (including the interspersed Cognitive Science Colloquia) give you the chance to hear about the science your colleagues are doing and are an easy way to catch up on a diverse menu of what is going on in cognitive psychology. They also let you ask questions and hear people discuss what we think are important conceptual and methodological issues. Further, Brown Bags provide clear models of what works in good presentations – because being an effective cognitive psychologist means mastering presentations, it is helpful to have a friendly forum for improving your skills in this arena. Finally, science is a communal, public enterprise, and Brown Bags are the only regular community activity that we have in our area. With all that in mind, the Cognitive faculty thinks it is very important for your training and the health of our program that we have strong attendance at Brown Bags. Consequently, attendance at Cognitive Area Brown Bags and Cognitive Science Colloquia is considered mandatory for all students and core faculty.

One of the most valuable things that you can do as a professional is to develop the contacts that will be resources to your professional career in the future. Some of these contacts, for example, may be made at the Brown Bags, where the speakers from the community come in to talk about their work. Another excellent way of meeting people in the discipline is to attend conventions and/or outside training activities. There are regular conventions held by most psychological organizations, many of which are within driving distance of Buffalo. When you attend such programs or conventions, it is valuable to introduce yourself to people and talk with them about their work and yours. This is often a difficult thing to do, but is a valuable aide to your career.

Student Guidance and Consequences of Negative Evaluations

Our program uses a mentorship model to train students. Students are accepted into the program with an identified faculty advisor. Continuation of the relationship with that mentor is arranged by mutual consent, in the sense that both the student and the faculty member must agree that the relationship will be mutually productive. Students are required to have a major advisor at all times, and to work closely with the mentor in developing their professional training. They are expected to meet regularly with him or her to discuss progress, problems and educational plans. At each stage of progress through the program, the student's advisor reports to the Area Faculty on the progress and performance of the student. An example of the yearly evaluation form completed by the mentor, discussed with the area, signed by the student, and submitted to the DGS is found at the end of this document. Students failing to meet any program requirements satisfactorily may, at the option of the faculty, be given a second

chance to meet that requirement. An individual who fails to meet preliminary requirements satisfactorily may be dropped from the program.

Completion Timeline

Most students finish the program in five or six years; the timetable below is based on a five-year plan for completion. Occasionally, students have completed the program in less than five years.

First Year

- Formation of the Individualized Mentoring Committee (IMC, advisor plus two other faculty members, at least one being cognitive), which will oversee student progress until the dissertation. Students meet with this committee at least once per year.
- Begin conducting research with their primary advisor.
- Propose and begin collecting data for the pre-dissertation project.
- Students typically take three classes per semester, one class in statistics, plus two others consisting of core cognitive classes and breadth requirements.
- Students typically do not present in the area Brown Bag during their first year but are welcome to do so.
- Complete required CITI training.

Second Year

- Meet with IMC.
- Complete and defend pre-dissertation project.
- Present pre-dissertation research in area brownbag.
- Plan and propose the qualifying project.
- Complete course-work to fulfill breadth requirements and core cognitive classes.

Third Year

- Meet with IMC.
- Complete and defend qualifying project.
- Upon completion of this project the student advances to “candidacy” status and is no longer overseen by the Individualized Mentoring Committee.
- Present qualifying project in area brownbag.
- Finish required course-work.

Fourth Year

- Form dissertation committee (at least three faculty members, comprising the advisor and at least one member of a different area or department).
- Plan and propose dissertation project.
- Present dissertation proposal in area brownbag.
- Take elective classes as needed (typically 1-2 classes per semester).

Fifth Year

- Complete and defend dissertation.
- Present dissertation results/practice job talk in area brownbag.

Learning Goals and Objectives

Our program focuses on training scientists who are experts in research and theory in modern cognitive psychology. In particular, our program provides training in the study of animal cognition, attention, auditory perception, categorization, cognitive neuroscience, computational modeling, development, eye movements and cognition, language, learning, memory, motor control and music psychology. The program also provides advanced instruction in statistics, experimental design and contemporary scientific methods (e.g., eye tracking, evoked potentials, and a variety of behavioral methods) used to study mental processes.

The program's training model is sequential, cumulative and increasingly complex as a student advances because the program is designed to produce independent scholars. The education and training objectives of the program are addressed through an interrelated program of academic course work and research experience. Students are involved in empirical research continuously from the time of their arrival in the program. Program unity is achieved through core experience required of all cognitive students. Diversity is also encouraged and available through specialty training, electives and research activities in the research laboratories of faculty outside of the primary mentor.

Students also participate in other less structured activities, including colloquia, cognitive Brown Bag presentations, professional association activities, conference presentations, interdisciplinary campus events, department governance, and peer advising. Thus, students not only complete a rigorous academic program but also become members of the psychological community interacting with program faculty, professional cognitive psychologists outside the program, and fellow students on both scholarly and personal levels.

Specific Goals and Objectives for PhD Students in Cognitive Psychology

Goal 1: Students will acquire and demonstrate knowledge and skill necessary to plan, conduct, evaluate and disseminate research in areas relevant to cognitive psychology.

Objective 1-A: All students will demonstrate skill in critical review and evaluation of the current corpus of knowledge available on the problem of interest.

Expected Competencies: This will be evidenced by: (1) successful completion of courses that involve literature review activities, (2) successful completion of a qualifying project (conducted outside of the student's home laboratory), (3) a pre-dissertation year project, (4) PhD dissertation proposals and final products that demonstrate accurate and effective review of relevant literature, and (5) participation in manuscript preparation activities for items 2-4.

Objective 1-B: Students will exhibit competence in statistics and research methods.

Expected Competencies: Competence in this arena will be evidenced by successful completion of two required courses in statistics and of a qualifying project, a pre-dissertation project, and a PhD dissertation project involving sound research methods and data-analysis procedures.

Objective 1-C: All students will demonstrate skill in planning and conducting increasingly independent theoretical and empirical research. This research will be of high quality and completed in a timely manner.

Expected Competencies: Evidence of competence in meeting this objective includes students' successful completion of: (1) the pre-dissertation project by the end of the 4th semester, (2) the qualifying project

by the end of the 6th semester, (3) the PhD dissertation proposal, and (4) the PhD dissertation defense.

Objective 1-D: Students are encouraged to collaborate with cognitive and non-cognitive faculty on other research beyond the qualifying and pre-dissertation projects and PhD dissertation.

Expected Competencies: This participation may include paid research assistant positions or unpaid work as an assistant or collaborator. Students are expected to show evidence of research activities including helping plan, execute, supervise, and/or analyze research, and preparing research publications and presentations.

Objective 1-E: Students are encouraged to disseminate the results of their theoretical and empirical work to the profession and broader community.

Expected Competencies: Students can display competencies related to this objective in a variety of ways, including student presentations at regional and national conferences, publication in professional outlets, presentation of workshops, and preparation of technical reports. In addition, all students are required to present their qualifying and pre-dissertation projects at Cognitive Brown Bags attended by students and faculty.

Objective 1-F: All students will demonstrate an appreciation of the importance of diversity issues in research.

Expected Competencies: Competencies for this objective are evidenced by (1) successful completion of courses that incorporate information and discussion on diversity and (2) student sensitivity to these issues in their theoretical and empirical research.

Objective 1-G: All students will demonstrate an understanding of ethical issues in research.

Expected Competencies: Students are expected to increase their knowledge of, and sensitivity to issues surrounding the responsible conduct of research with human and other animal subjects, improve their ability to make ethical and legal choices in the face of conflicts involving scientific research, to become knowledgeable about the regulations, policies, statutes, and guidelines that govern the conduct of research, and gain an understanding and knowledge of the federal regulations and guidelines that apply to cognitive research.

Goal 2: Students will acquire and demonstrate knowledge and skills relevant to the theory and research in cognitive psychology.

Objective 2-A: All students will demonstrate knowledge of modern scientific approaches to research on human and animal information processing.

Expected Competencies: Students will perform successfully in required courses in these areas and will demonstrate understanding of the scientific foundations of cognitive psychology.

Objective 2-B: All students will demonstrate knowledge of specialized areas of cognitive psychology.

Expected Competencies: Students will successfully complete several cognitive electives, and they will attend research presentations, workshops, and seminars relevant to cognitive psychology.

Objective 2-C: All students will demonstrate understanding of ethics and professional issues.

Expected Competencies: Students will successfully complete the required cognitive courses into which these issues are integrated.

Goal 3: Students will acquire and demonstrate broad knowledge of psychology and demonstrate ability to integrate these areas with cognitive psychology.

Objective 3-A: All students will document knowledge of diverse areas of psychology.

Expected Competencies: These competencies are evidenced by successful completion of departmental distribution requirements that entail completion of courses in each of the areas of the department,

namely, behavioral neuroscience, cognitive psychology, social-personality and clinical, and by successful completion of a graduate course in the history and systems of psychology.

Objective 3-B: Students' PhD dissertation projects will reflect appreciation of diverse areas of psychology.

Expected Competencies: Students' PhD dissertation proposals, oral defenses and written projects will include satisfactory coverage of the areas of psychological sciences that are relevant to the research topic addressed by the dissertation.

Goal 4: Students will acquire knowledge and skills necessary to conduct themselves professionally and to prepare for careers in cognitive science.

In addition to the above activities, in which students are socialized into academic cognitive psychology, they are expected to behave in a professional manner.

Objective 4-A: All students and faculty will attend a Cognitive Brown Bag on Current Issues in Cognitive Psychology.

Expected Competencies: Attendance at the Cognitive Brown Bag is mandatory for students.

Objective 4-B: Students' progress through the program will reflect active participation, timely progress, and satisfactory performance in all aspects of the cognitive program.

Expected Competencies: Specific rates of progress will reflect students' individual training needs, although the program is structured to allow completion in four to six years.

Objective 4-C: Students are expected to participate in professional activities at the Department, University, community, and professional levels.

Expected Competencies: Competencies for this objective include involvement in professional organizations, membership on Department, University, or professional organization committees, participation in review activities, presentations, publications, grant writing, and teaching.

Milestones (check when completed) and recommended time of completion:

Year 1

IMC Committee Formation _____
RCR/CITI/IACUC Training Completed _____
Pre-Dissertation Project Proposed _____
Pre-Dissertation Project In Progress _____
TA Duties Completed _____

Year 2

IMC Yr 2 Meeting _____
Pre-Dissertation Project Defended _____
Brownbag Presentation Year 2 _____
QP Proposed _____
QP In Progress _____
TA Duties Completed _____

Year 3

IMC Yr 3 Meeting _____
Brownbag Presentation Year 3 _____
QP Defended _____
Advance to Candidacy Application _____
Advance to Candidacy Accepted _____
TA Duties Completed _____

Year 4

Dissertation Committee Formed _____

Brownbag Presentation Year 4 _____

Dissertation Proposed _____

Dissertation In Progress _____

Successfully Taught Course _____

Year 5

Dissertation Defended _____

Brownbag Presentation Year 5 _____

TA/Instructed Satisfactorily _____

Progress Towards Learning Outcomes:

(Initiated, **Attained**, **Reinforced**, **Mastered**)

Initiated: Student has begun to develop this skill or is current taking coursework that supports this goal.

Attained: Student has developed skills or completed a course in this area, but has not yet begun to extensively demonstrate this skill.

Reinforced: Student has completed additional coursework, experience, or training in this area, and is demonstrating advanced performance in this area.

Mastered: Student has achieved a high level of performance in this area.

_____ Students will acquire and demonstrate knowledge and skills necessary to plan, conduct, evaluate, and disseminate research in areas relevant to cognitive psychology. This includes competence in critical review and evaluation of the current corpus of knowledge available on the problem of interest, statistics and research methods, planning and conducting increasingly independent theoretical and empirical research, and disseminating the results of their work to the profession and broader community.

NOTES:

_____ Students will acquire and demonstrate knowledge and skills relevant to the theory and research in cognitive psychology. Students will demonstrate knowledge of modern scientific approaches to research on human and animal information processing, they will demonstrate knowledge in specialized areas of cognitive psychology, and they will demonstrate understanding of ethics and professional issues.

NOTES:

_____ Students will acquire and demonstrate a broad knowledge of psychology and demonstrate an ability to integrate these areas with cognitive psychology. Students will obtain knowledge of and an appreciation of diverse areas of psychology.

NOTES:

_____ Students will acquire knowledge and skills necessary to conduct themselves professionally and to prepare for careers in cognitive science and are expected to participate in professional activities at the department, university, community, and professional levels.

NOTES:

Summary of Progress/Recommendations to Student:

Status (good standing, probation and terms, termination from program):

Signatures

Area Head: _____ **Date:** _____

Student: _____ **Date:** _____

DGS: _____ **Date:** _____

Student comments: