University of California, Berkeley
Department of Psychology
Graduate Program in Cognition, Brain, & Behavior

Graduate training in the CBB Program focuses on three central elements: **research**, **coursework**, and **teaching**. Students delve right into empirical research by placement into a faculty laboratory. It is expected that students work with a faculty advisor and progress toward their own research program, which culminates in the completion of the doctoral dissertation. Coursework involves a set of classes—mostly conducted during the first two years of graduate school—that is geared toward providing both breadth and depth in the field. Teaching skills are developed by requiring all students to take a course on teaching (Psychology 300) and to serve as a teaching assistant in three courses (at UC Berkeley teaching assistants are known as Graduate Student Instructors or GSIs).

Faculty laboratories develop research programs within three highly integrated and interactive disciplines: 1) systems neuroscience, 2) cognitive neuroscience, and 3) cognitive psychology. Programs in *systems neuroscience* use animal models to investigate the underlying neural substrates of cognitive function. These research programs apply neurophysiological and anatomical methods in conjuction with careful behavioral analyses. Programs in *cognitive neuroscience* use human functional neuroimaging (e.g., fMRI, EEG) as well as neuropsychological (e.g., analysis of neurological patients) techniques to help link cognitive and brain function. The CBB program is unique in having both state-of-the-art brain imaging and neurological expertise within the department. Programs in *cognitive psychology* develop sophisticated behavioral analyses of cognitive function. In particular, these programs include computational and developmental analyses of cognition.

Across these research programs, areas of specialty include:

- Sensory and Perceptual Processes
- Attention and Working Memory
- Learning and Memory
- Language
- Thinking and Problem Solving
- Cognitive and Motor Control
- Cognitive Development

Research

The first thing that most students learn in graduate school is that taking classes is easy, teaching is rewarding, but doing research is sometimes difficult and frustrating. Therefore, there is a tendency to focus on the other two elements, and put off either the initiation or the completion of one's research. This is a big mistake: *all graduate students should be involved in research from the first day of graduate training*. If you don't have a clear idea for a research project, your advisor will help you find one (and actually it's often better *not* to have a clear idea before you begin—that is, don't feel compelled to do something you did as an undergraduate student). As you progress through the program, you will become increasingly more independent of your advisor. However, science is necessarily a collaborative enterprise, and it is the rare (and not necessarily the most successful) student whose dissertation is entirely independent of other work going on in the laboratory. Most of your research will be conducted in collaboration with your advisor, but it is useful to consider research investigations with others in the program; such endeavors broaden you intellectually.

Second-year project report: This report is required of all Psychology graduate students and consists of a written report (APA format) of empirical work conducted during the first two years of graduate training. The purpose of the requirement is to insure that students have initiated empirical research and can prepare a report on its progress. According to Department rules, students may not meet this

requirement merely by presenting a poster presented at a scientific meeting. The second-year project report must be submitted by the end of the Spring semester (i.e., May) of your second year in the Program.

Note: The Department does not require a Master's degree on route to the PhD., and in fact, it is discouraged. The time and effort in obtaining a M.A. is better spent on writing research papers or preparing for your Qualifying Exam. Indeed, the only time to consider a M.A. is when you feel that the Ph.D. program is not for you, and you decide to obtain a terminal Master's degree.

Qualifying Examination: The Qualifying Exam is often viewed as *the* major event during one's graduate training (outside of actually competing your Ph.D. thesis). It consists of a written and oral examination in which knowledge of three topics in the field is assessed. The three topics are chosen by the student and are meant to cover a broad spectrum of cognitive research. Students organize a committee of four faculty members, and at least one member of this committee must be an UC Berkeley faculty from a different department. One faculty member is designated the Chair. The Chair coordinates the exam and cannot be the chair of your future Ph.D. Thesis Committee. Thus, the Chair of your qualifying exam is typically not your advisor. Students meet with each committee member and form reading lists, one for each of the three topic areas. Readings lists are then submitted for committee approval. The written examination is a closed-book essay exam in which students answer questions posed by committee members. The written examination is followed by the oral examination, which usually takes place within one week of completing the written exam. Check out the Qualifying Examination Worksheet available from the Department's Office of Student Services. You are required to have passed the Qualifying Exam by the end of your third year in the Program. Once you have passed the Qualifying Exam, you can petition to be ***advanced to candidacy***.

Note: Third-year students must set a date for their Qualifying Exam no later than the first day of the Spring Semester of their 3rd year, and the exam must be completed no later than the last day of regular classes of that same semester. If this is not accomplished, the graduate advisor will assign a committee and a Spring semester date for your examination. Students who do not appear for their orals will automatically fail. Note also that students are discouraged from scheduling oral and dissertation committee meetings during the summer (June-August), because faculty members are under no obligation to attend summer meetings.

Dissertation Proposal Meeting: After you have passed your Qualifying Exam and have advanced to candidacy, you will assemble your PhD Thesis Committee, a group of at least 3 members, one of whom is a faculty member outside the Department (and often the same person who was on your Qualifying Exam committee). At this meeting you present your dissertation proposal for approval. It is recommended that you have your dissertation approved by the end of your third year.

Note: Students are required to advance to candidacy no later than the last day of the Fall Semester of their 4th year. Failure to complete this requirement may result in funding cuts. Also, a Ph.D. thesis can include previously published or co-authored material, provided that the published material is "incorporated into a larger argument that binds together the whole dissertation or thesis." Our advice is to take a coherent subset of the research you have conducted as a graduate student, rewrite whatever's already been published, unite it with as-yet unpublished material, and call it a dissertation. Outside of your committee (and perhaps your parents) few if any will actually read your doctoral thesis. For everything you wanted to know about the dissertation but were afraid to ask, check out the pamphlet, Guidelines for Submitting a Doctoral Dissertation or a Master's Thesis published by the UC Berkeley Graduate Division.

Research Presentations: You are required to give two presentations to the CBB group. The first presentation is a 20-min talk (in the format of a conference presentation) to be given in the CBB Colloquium (or similar platform) no later than the end of your third year. The second presentation is a

60-min talk (in the format of a job talk) to be given in the CBB Colloquium (or similar platform). This second presentation is a celebratory event meant to honor your completion or near-completion of the doctoral thesis.

Coursework

Departmental Courses: All Psychology graduate students are required to take six courses during the first two years of training. These courses are meant to hone academic skills. These courses include five first-year courses: a one-year (two-semester) seminar series (Psych 292a/292b) that introduces you to the department and professional issues, a course on Teaching and GSI Training (Psych 300), and a one-year statistics requirement (Psych 205a/205b). In the second year, all students take a research seminar course (Psy 293), which is taught in the Spring semester.

CBB Proseminars: As a way to provide breadth and depth of cognitive research, CBB students must take three proseminars from the list below. Proseminars are taught by groups of faculty and include a final exam at the end of the course. It is possible to substitute one of these proseminars with one taught by another area. Proseminars are offered on a bi-annual basis.

Cognitive Neuroscience (usually taught in the Fall of odd numbered years)
Sensation/Perception (usually taught in the Spring of odd numbered years)
Human Memory (usually taught in the Fall of even numbered years)
Foundations of Cognition (usually taught in the Spring of even numbered years)

CBB Seminars: CBB students must take four seminars during graduate training. Seminars cover a variety of special interests or topics in cognition. These courses generally involve weekly reading of journal articles and class discussions, which are often led by students in the class. Most seminars are casual and geared toward gaining knowledge in a particular topic area (for both students and instructor). Exams are rarely given in seminar courses. Although students are required to take four seminars, it is encouraged that you enroll in as many as your interests demand.

Note: Students interested in using fMRI methodology are required to take the MRI Methodology course, which counts as one of your CBB seminars.

CBB Colloquium: Every semester, all CBB students are required to attend and enroll in the weekly CBB Colloquium series (Psych 229), which is held on Fridays, 11 am. The CBB Colloquium includes presentations by visitors, faculty, and graduate students.

Research Units: Throughout your graduate training, you will enroll in independent study research units (Psych 299). These units are variable and will increase as you decrease your coursework load.

Teaching

Being as GSI: All Psychology graduate students are required to act as a GSI for three courses. These paid half-time positions entail a maximum duty of 20-hours per week. One of these courses must be the Introduction to Psychology course (Psych 1) or the Research Design and Methods course (Psych 101). Course assignment is determined by departmental need, faculty choice, and student choice.

Teaching Psych 2: Graduate students have the opportunity to organize and teach their own introductory course. Psych 2 is the introductory course for non-majors. Every semester, two graduates are invited to teach the course. This opportunity is time-consuming but offers students a chance to develop a course and gain teaching experience.

You're Done!

Graduate training can be an enjoyable and rewarding experience. The skills acquired in graduate school at UC Berkeley will take you far in academia. Many former Berkeley graduate students are now prominent scientists in the field.

Working Your Way Through the Program

Outlined below is a suggested timetable for completion of the CBB Ph.D. Program. It is expected that you will complete the Program in four or five years (it is strongly encouraged that you *plan* to take four years to complete, which often means that it may take an additional year to finish up).

YEAR 1	
Fall	**Spring**
Begin empirical research with advisor's consultation	
Professional Issues (Psych 292a)	Professional Issues (Psych 292b)
Statistics (Psych 205a)	Statistics (Psych 205b)
CBB Proseminar 1	CBB Proseminar 2
Teaching & GSI Training (Psych 300)	CBB Seminar 1
Colloquium (Psych 229)	Colloquium (Psych 229)
Research Units (Psych 299)	Research Units (Psych 299)
Fulfill 1 or 2 GSI Appointments	

YEAR 2	
Fall	**Spring**
Continue research, write 2nd yr research report (due in May)	
CBB Proseminar 3	Research Seminar (293b)
CBB Seminar 2	CBB Seminar 3
Colloquium (Psych 229)	Colloquium (Psych 229)
Research Units (Psych 299)	Research Units (Psych 299)
Fulfill remaining GSI Appointments	
Fulfill Research Presentation Requirement (20-min talk)	
Consider forming your Qualifying Exam Committee	

YEAR 3	
Fall	**Spring**
You Must Schedule and Take your Qualifying Exam	
CBB Seminar 4	Consider taking more seminar courses
Colloquium (Psych 229)	Colloquium (Psych 229)
Research Units (Psych 299)	Research Units (Psych 299)
You Must Fulfill Research Presentation Requirement by Year 3 (20-min talk)	
Advance to Candidacy & Have Dissertation Proposal Meeting	

YEAR 4	
Fall	**Spring**
You Must Have Advanced to Candidacy & Have Dissertation Proposal Mtg	
Consider taking more seminar courses	
Colloquium (Psych 229)	Colloquium (Psych 229)
Research Units (Psych 299)	Research Units (Psych 299)
Fulfill 2nd Research Presentation Requirement (60-min talk)	