

## Memo

Re: the Graduate Program in Cognitive & Neural Systems (CNS)  
From: Prof. Dan Bullock, CNS Program Director  
To: Nancy Geourntas, Executive Assistant to the Dean, College of Arts and Sciences  
Date: 13 October 2012

**This memo is being sent in lieu of a full planning report for CNS**, in accord with past guidance from Deans S. Jackson and J. Hughes. This guidance reflects the fact that the Graduate Program in Cognitive & Neural Systems is being faded out, and has been partially replaced by the Graduate Program for Neuroscience (GPN).

### **1. Course offerings needed by current CNS students in future years.**

All CNS doctoral students have completed all the CNS courses that they needed to satisfy degree requirements. Approximately 20 doctoral students remain in good standing and all can be expected to complete their dissertations by August 2015.

The remaining students in the CNS Graduate Program who need to complete CNS courses to satisfy degree requirements are students in the BA/MA programs. These students' course needs will be satisfied if the July 2011 plan proposed by Prof. Frank Guenther to meet expected GPN course needs in the 2012-2013 academic year is maintained.

The GPN plan includes the following courses that the two current BA/MA students need and are planning to take:

Spring 2013: CN540 (Bullock), CN570 (Bullock), CN580 (Schwartz).

It is critical that these courses be offered as scheduled in Spring 2013, because the students expect to be able to complete the CNS MA degree requirements in one calendar year. Thus, it may be necessary to offer one or more of these courses despite a low enrollment.

If the current policy of admitting no new students to CNS programs is maintained, then after the 2012-2013 academic year, there will be no students in CNS programs who need additional CNS courses to fulfill CNS degree requirements. (This assumes that no student will fail, and need to retake, a CNS course offered in 2012-2013.)

### **2. Fate of the CNS graduate curriculum in the GPN plan submitted by Frank Guenther.**

(Although no longer the responsibility of the CNS Program after 2012-2013, this section is included for completeness.)

In Frank Guenther's GPN plan (of 28 July 2011), 5 graduate CNS courses would be eliminated: *CN500, CN520, CN700, CN710, and CN760.*

Courses to be retained and offered *annually* would be: **CN510** and CN560.

Courses to be retained and offered *biannually* would be: **CN530**, CN540, **CN550**, CN570, CN580, CN720, **CN730**, CN740, CN780, and **CN810**.

The five courses shown above in boldface have recently been taught by lecturers, or by faculty no longer at Boston University, so their continuation depends on finding funding for the lecturers (or on new assignments for regular faculty members who may be willing and able to cover these courses). Presumably, the designations of these courses will be changed from CN to others, reflecting the departments of their current instructors.

### **3. CNS undergraduate courses.**

The 200 and 300 level CNS undergraduate courses also had NE designations, and they have had the CN designation deleted. These courses are now the responsibility of the units involved (e.g., due to the departmental home of the faculty instructor): the Neuroscience major, the Psychology Department, and Sargent College.

### **4. Fate of the CNS MA and BA/MA programs.**

According to guidance from Dean Sapiro, the decision to dissolve the CNS Department did not entail discontinuing any of its programs. However, trying to continue the doctoral program would have placed CNS in competition with the Comp-Neuro specialty in the new GPN. No one found that to be desirable. Therefore, it was decided to wind down the CNS doctoral program as soon as already enrolled students have finished their degree requirements. No new admissions have occurred since 2010.

The decision to wind down the doctoral program did not entail discontinuing the MA and BA/MA programs. However, it was decided that new admissions to these programs would be suspended after May 2011, pending review of the viability of these programs. Although in this case there are no directly competing programs at Boston University, there are two questions that must be answered:

- a) Will there be sufficient student demand to warrant continuation of these MA-level programs?
- b) If so, within what academic unit should these programs be continued in some form?

These two questions are intertwined. Demand has been very low in recent years, e.g., only 2 students signed up in Spring 2011. Demand is not likely to be sufficient to warrant continuation unless the programs are maintained within an academic unit that provides a scientifically and socially vibrant home for the students in the programs. In the past year, I have received only about 10 inquiries from prospective MA or BA/MA applicants. A few of these were high school seniors.

In my view, the CNS Program – in the absence of new doctoral student admissions, with no faculty that regard it as the future focus of their primary or even secondary commitments (now that GPN exists), and with no CNS Program-specific contacts with BU undergraduates who might be interested in a BA/MA program – is not a viable home for these programs

going forward. Here it should be noted that many past MA students were students who were initially denied admission to a very competitive CNS doctoral program, and who were hoping to be promoted to the PhD program after proving themselves within the MA program. This produced some excellent doctoral students, now professors, but such a path no longer exists.

It is therefore my recommendation that the MA and/or BA/MA programs be discontinued, or taken over after Spring 2013 by some other BU unit, if any is interested. The most relevant existing unit at BU would be the GPN. However, MA-level training was purposefully omitted from the GPN charter, and my information is that the leadership of that unit has no current interest in offering MA-level training. The *undergraduate* Neuroscience major also seems irrelevant, by definition, as originally (and currently) constituted. Three other potentially relevant units are:

**Psychology Department**, which regularly admits ~ 40 MA students and now has at least four regular faculty members (Bullock, Hasselmo, Rucci, Somers) who could teach courses in computational neuroscience. I have spoken with the department Chair, Michael Lyons. He indicated that he would not be opposed to exploring the possibility of transferring the CNS BA/MA programs to Psychology if the faculty were in favor after full discussion of the implications. This has not yet been explored. An important caveat: It could prove very difficult to recruit students seeking *computational* MA-level training to a program within a department called simply "Psychology".

**Mathematics Department**, which has at least four regular faculty members (Eden, Kon, Kopell, Kramer) who can teach courses in computational neuroscience.

**Biomedical Engineering**, which has at least three regular faculty members (Sen, Shinn-Cunningham, Ritt) who can teach courses in computational neuroscience.

Of these Departments, only Psychology is very well suited to carry on the CNS MA and BA/MA programs in anything close to their current forms, i.e., *with a curriculum that focuses on how to construct mathematical models that bridge from neural operations to psychological functions*. It seems likely that any of the other units mentioned would rather utilize a significantly different curriculum that was better suited to each unit's discipline, faculty strengths, and student preparation profiles. No discussions have occurred with these other departments.