

## 2008-2009 Grant Proposals

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Lincoln Craton

### "Headphones for 'The Making of Musical Minds: Research in the Psychology of Music' Project" Classroom Innovation Grant proposal

*Project Description:* Professor Margaret Angelini in the fine arts department and I are teaching a brand new Learning Community course this year on the psychology of music. As I write this in the fall of 2008, our first cohort of students is gaining a basic knowledge of musical theory and structure by taking Professor Angelini's Music Theory course (FA 240). Next spring 2009, these students will apply this knowledge in the Integrative Seminar and in my Research Methods in Psychology course (PC 271). In the seminar students will read, critique and present empirical studies on music perception/cognition, the development of musical preferences, the social psychology of music, and related topics. In Research Methods, also taken in the spring, our students will draw on this scientific literature to design, conduct and write-up an experiment on a topic in the psychology of music.

The research that our students will read about and try to emulate for their Research Methods projects has been conducted in sophisticated music cognition laboratories around the world and employs a variety of equipment and materials that that we cannot yet make available to students: music notation software, digital processing software for digital, analog and MIDI sound input/output, sound mixers, synthesizers, analog and digital tape recorders and other audio gear, editing and archiving facilities, computer-based digital sound analysis equipment, digital video editing suites, non-Western musical instruments and other artifacts, specialized computer workstations with digital musical artifacts such as databases containing notated musical scores, sound attenuation chambers for stimulus presentation. And so on.

If the LC is a success, we will try to accumulate some (certainly not all!) of this equipment and thus steadily increase the range of research experiences that we can offer our students. For the time being, we can "make do" with what we have: one copy of musical notation software (Finale) in the fine arts department, free downloadable software on the internet (a very basic version of Finale called Finale Notepad; open source sound processing software called Audacity), and--most importantly--lots and lots of computers with standard software (e.g., Powerpoint).

*Benefit:* It is the plethora of computers--both college-owned machines in computer labs on campus and student-owned laptops--that I believe will make the research component of our LC a success. A lot can be done with a students' personal music collection and their laptop computer, especially if these are used in conjunction with high quality, stereophonic headphones. For their projects, students will typically be presenting musical stimuli to 20 or more listeners, tested individually. If students have the option of checking out headphones from the LC professors, they will be able to present research participants with high quality stereo stimuli. It is not just that these stimuli will be more pleasant when presented through headphones as compared to the tinny timbre of laptop speakers, though we all know that is certainly the case. The more important point is that headphones will make it possible for student researchers to test listeners' abilities to make subtle judgments about the musical stimuli because: 1) of the superior sound quality produced; 2) the ability to control certain parameters (e.g., presentation to left versus right ear); and 3) the filtering out of background noises, allowing student experimenters the flexibility to test participants in many different locations (even a noisy dorm!).

*Community Outreach Plans:* Research Methods in Psychology is required for all psychology majors, and at the end of every semester we hold a Poster Conference in the dining commons where students present their completed research projects. With the addition of an LC section of Research Methods, this conference will now include presentations of research in the psychology of music, a high-interest area among our students (and many faculty!). We hope to generate an extra bit of intellectual "buzz" from the accessible but rigorous projects conducted by our LC students.

*Budget:* Five pairs of Sony MDR-NC60 noise cancelling headphones at \$199.99 each equals about \$1,000, the maximum amount specified for this type of grant. I believe that the purchase of headphones will provide a lot of "bang for the buck," and hope you agree!

Amount Requested: \$1,000.

Syllabi. Available upon request.