

Multimodal Neuroimaging Training Program (MNTP)
NIH predoctoral training in CNBC multimodal neuroimaging

Guidelines and requirements

2014 - 2015

The following are guidelines, suggestions, and requirements for support on the NIH predoctoral training grant in multimodal neuroimaging. Although the list of requirements (shown in *italics*) may appear rather lengthy, it is not meant to add an undue burden to trainees or to detract from the student's ability to pursue their research interests. Indeed, we believe that these requirements will contribute positively to the training experience. However, if any requirement is deemed by a trainee not to be necessary or appropriate to them, they are encouraged to communicate this to the Training Grant Co-Directors and an attempt will be made to reach a mutually agreeable revision in the program.

TRAINEE

A. Eligibility

1. Trainees committed to research training in multimodal neuroimaging.
2. Full-time trainee in good standing at the University of Pittsburgh or Carnegie Mellon University.
3. Trainee in the Center for Neural Basis of Cognition graduate program. If currently not in the CNBC program, it is necessary to participate the CNBC Graduate Program

B. Advisory Committee

Trainees should establish an advising committee. That committee should consist of their primary research advisor, a co-mentor if applicable, and others as dictated by the trainee's interests. Each committee should be composed of at least two faculty members, consisting of methods/modeling and neuroscience faculty. The committee should meet at least once every six months and a brief report should be sent from the advising committee to the MNTP Steering committee.

C. Laboratory Rotations (only for first year trainees)

The great majority of each trainee's time is to be spent in learning about imaging research methods. The laboratory rotations will allow hands-on research experiences in multimodal imaging and its application. In the first year of the fellowship, trainees will rotate through two different laboratories selected by trainees to meet their research interests. These research rotations provide an ample opportunity to experience individual laboratory environments, including the imaging modalities being used in the laboratory and the research questions being addressed. These experiences allow in-depth understanding of neuroimaging research.

D. Course work

CNBC students are required to take four Core courses (Cognitive Neuroscience, Systems Neuroscience, Neurophysiology, and Computational Neuroscience). In addition, MNTP trainees will take at least one of many imaging courses offered to enhance trainee's imaging knowledge; this course will be chosen with the trainee's advisory committee based on the trainee's background and objectives. These courses ensure that students have basic knowledge of neuroscience and imaging, facilitating

communication among students and faculty in different disciplines and in different imaging modalities.

E. Teaching Assistant

Trainees are required to participate in the 6-week MNTP Summer Workshop as a TA in one of multiple imaging modules (fMRI, DTI, MEG, PET, Optics; see www.mntp.pitt.edu). The choice of imaging modality is based on the trainee's experience and knowledge, which will be determined mutually by the MNTP co-Directors and trainee. This teaching assistantship will enhance trainee's teaching skills, which is critically important for trainee's future career. During the Summer workshop, trainees are required to participate in basic lectures (mostly in the first week of the Workshop) on imaging modalities to expand their knowledge of multimodal imaging.

F. CNBC brain bags, seminars, and annual retreat

Trainees as CNBC students are required to participate in the CNBC annual retreat, student-run colloquium series, student research presentation series, Friday Seminar Series, and will take survival skills and ethics workshops. Details can be found in the CNBC website: <http://www.cnbc.cmu.edu>.

G. Responsible Conduct of Research

- a. *The NIH requirement for training in research integrity must be satisfied. This is to be accomplished by (1) becoming familiar with the Office of Research Integrity Guidelines for Ethical Practices in Research, (2) being familiar with the guidelines for the use of human and/or animal subjects as this applies to their research (see below), and (3) participation in The Survival Skills and Ethics Program workshops.*
- b. *Trainees must satisfy one or both of the following requirements, if relevant to their research:*
 - i. **Human subjects:**
 1. Become familiar with appropriate institutional and federal guidelines.
 2. Complete the appropriate online research practice fundamentals module on human subject research.
 - ii. **Vertebrate animals:**
 1. Become familiar with USPHS guidelines on the care and treatment of animals and any relevant institutional guidelines.
 2. Complete the online research practice fundamentals module on use of laboratory animals in research and education.

- H. Professional development:** *Trainees are expected to acquire the information provided in the topics covered in monthly “survival skills” workshops held during their year of support.* In general, this will involve attending the workshops which deal with; (1) selecting research questions, (2) writing research articles, (3) oral and poster presentations, (4) teaching, (5) grantsmanship, (6) time, stress and conflict management (7) obtaining and (8) maintaining employment.
- I. Other training**
- a. **Critical reading:** *Trainees should obtain explicit training in critical reading of the research literature in their area of interest through participation in “journal clubs” (such as the NeuroImaging Journal Club).*
 - b. **Oral presentation of research results:** Trainees are encouraged to find opportunities for presentations both locally and at national or international meetings.
 - c. **MNTP External Advisory Meeting:** Trainees are required to present their research results at the Annual MNTP External Advisory Board meeting.
- J. Evaluation:** *A brief report should be sent from the trainee’s advising committee to the MNTP Steering Committee at the end of each year. Trainees also should provide a progress report to the MNTP Steering Committee two months prior to the end of their appointment period.*
- K. Follow-up:** For the purpose of preparation of reports to NIH, trainees will be requested to provide additional progress reports from time to time for a period of 10 years after the end their traineeship, thus, former trainees are asked to keep the CNBC office informed of their contact information.
- L. Second year of support:** In some cases, trainees may wish to request a second year of training grant support. Such applications should be submitted approximately 9 months after the beginning of the initial training and should be accompanied by a progress report, a letter of nomination from the primary advisor, and a copy of the individual fellowship application or its equivalent. Please note that in some cases, second year support may not be available due to lack of funds. Trainees may therefore wish to check with one of Training Grant co-Directors well in advance of their application. These applications will be viewed competitively with other applications.

For further information about any of these guidelines and requirements, please contact the Training Grant Co-Directors, Peter Gianaros (gianaros@pitt.edu) or William Eddy (bill@stat.cmu.edu).

Revised: January 2014