

Movement and Cognitive Rehabilitation Science (MCRS) Area – Comprehensive Examination Guidelines

A comprehensive examination in the student's area of specialization is given typically following completion of all course work (typically two years of post-Master's study at The University). Faculty on the examining committee are to include at least 2 MCRS faculty members chosen by the student's advisor (the committee chair), all of whom are members of the department's GSC. Additional committee members who may be added, as deemed relevant for their content expertise, need not be either MCRS or GSC members. The Comprehensive Exam includes the Specific Aims and Research Strategy of an NIH R21 grant, followed by an oral defense. The students will have 4 weeks to complete the written component of the exam. The topic can be related to work that is currently being conducted in the student's home lab, but must involve a novel component (e.g., one Specific Aim which is different from other aims that the student's home lab has researched or proposed research on, or some novel analysis of existing data performed by the student). The options for introducing novelty will be flexible to accommodate the variety of research and mentoring styles within MCRS. The committee will judge the proposal following guidelines similar to those followed by grant or article reviewers. That is, the proposed work may extend existing findings or ongoing work to some extent but must propose to advance the field in some way. The topic must be entirely conceived by the student. Students cannot consult other students or faculty about any aspect of their proposal during the examination period. The Comprehensive Examination will include two parts:

1. The first part will be a Research Plan of an NIH R21 grant to cover a broad area of research both encompassing and extending the general topic area the student plans to pursue for their dissertation. The proposal itself is not to exceed 7 total pages (1 page for Specific Aims, 6 pages for Research Strategy, not including references), formatted according to NIH formatting guidelines: http://grants.nih.gov/grants/writing_application.htm. The budget, resources, Biosketch and IRB/animal committee approval are not necessary. Proposals will be submitted at least 2 weeks prior to the scheduled oral exam.
2. The oral exam takes place approximately two weeks after submission of the written proposal. The oral defense is roughly 1 hour in duration and it is conducted by the Comprehensive Examination Committee. All faculty members in MCRS will be invited to attend the oral exam; however, only those faculty members on the examining committee itself will be allowed to vote. The student will first give a 15-20 minute PowerPoint presentation on their proposal, followed by 30-35 minutes of questions and discussion. The oral exam will be used to determine whether the student's written proposal adequately represents the student's knowledge. For example, a student's proposal may seem to be unsatisfactory due to unclear writing, and it may become clear during the oral exam that the student's knowledge is satisfactory. Or, if a student has included material in the proposal but does not actually understand the material, this may become apparent during the oral exam.

The outcome of the examination will be recorded as one of four possible outcomes:

1. *Advance to Doctoral Candidacy*: The student passes the comprehensive exam. The committee recommends that the student be advanced to candidacy immediately.
2. *Advance to Doctoral Candidacy with Conditions*: The student passes the comprehensive exam with required revisions. The committee recommends that the student advance to candidacy but is required to meet minimal conditions, such as honing a portion of the exam. The committee chair/student's advisor will evaluate the quality of the revisions and may invite other members to review the revision.
3. *Continue in Doctoral Program without Advancement*: The student does not pass the comprehensive exam. The committee recommends the student not advance to candidacy until specified conditions are met. Conditions may include additional course work and additional

involvement in research. Students must then retake both the written and oral exams. The committee will make specific suggestions to the student about how to strengthen areas of weakness, and the student will work with their committee chair/advisor to develop a timeline for meeting conditions and retaking the exam. Graduate Studies Committee policy permits students one retake.

4. *Drop from Program*: The student does not pass the comprehensive exam and the committee recommends that the student be dropped from the program.

Comprehensive Examination Evaluation Criteria

These criteria were adapted from NIH Standard Review Criteria, but note that the emphasis for grading will be on the Approach section. http://grants.nih.gov/grants/peer/reviewer_guidelines.htm

1. Significance (20% of total grade)
 - Does the project address an important problem or a critical barrier to progress in the field?
 - If the aims of the project are achieved, how will scientific knowledge, technical capability, and/or clinical practice be improved?
 - How will successful completion of the aims change the concepts, methods, technologies, treatments, services, or preventative interventions that drive this field?
2. Innovation (20% of total grade)
 - Does the application advance current research or clinical practice paradigms by utilizing novel theoretical concepts, approaches or methodologies, instrumentation, or interventions?
3. Approach (60% of total grade)
 - Are the overall strategy, methodology, and analyses well-reasoned and appropriate to accomplish the specific aims of the project?
 - Are potential problems, alternative strategies, and benchmarks for success presented?
 - If the project is in the early stages of development, will the strategy establish feasibility, and will particularly risky aspects be managed?