Movement and Cognitive Rehabilitation Science 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 3 faculty members chosen by the student and the committee chair who are both regular Movement and Cognitive Rehabilitation Science faculty and also members of the department’s GSC. Additional committee members who may be added, as deemed relevant for their content expertise, need not be either Movement and Cognitive Rehabilitation Science or GSC members. The Comprehensive Exam is comprised of a written proposal, followed by an oral defense. The topic of the exam is to be determined by the examining committee after consultation with the student during the first committee meeting set up by the student.

The written portion of the exam will include two parts. The first part will be a Literature Review to cover a broad area of research both encompassing and extending the general topic area the student plans to pursue for their dissertation. The examining committee will determine the scope of the Literature Review and the committee chair will present the topic to the student. The review itself is not to exceed 7 total pages (not including references), formatted according to NIH formatting guidelines (see below):

http://grants.nih.gov/grants/writing_application.htm

The second part will be a Research Proposal to cover a specific topic that is within the scope of the student’s Literature Review, but is distinct from their own dissertation plans. The examining committee will determine the specific topic of the Research Proposal and the committee chair will present the question to the student. The proposal itself should conform to NIH guidelines for an R03 or R21 type proposal (i.e., 1 page for Specific Aims plus 6 pages form main proposal, not including references). SF424 forms and instructions the student must use are available from the NIH website:

http://grants.nih.gov/grants/writing_application.htm

The budget, resources, and IRB/animal committee approval will not be necessary. However, the student will be required to submit a separate NIH formatted Biosketch.

The written portion of the exam (both Literature Review and Research Proposal) must be completed within 60 days. All written materials must be the independent work of the student. No contribution from anyone else will be allowed. The student cannot seek any input from the examining committee or chair once the Literature Review and Research Proposal topics have been presented to the student.

After submitting the written portion of the examination to their committee, the student may schedule the oral exam. The oral exam should be scheduled for 2 hours. All faculty members in Rehabilitation and Movement Science 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 Literature Review, followed 30-35 minutes of questions and discussion. The student will then give a second 15-20 minute PowerPoint presentation on their Research Proposal, again followed by 30-35 minutes of questions and discussion. The final approximately 20 minutes of the oral exam will allow for general questions and for the committee to confer and render their decision.

The specific criteria for evaluating both the Literature Review and Research Proposal are attached. The outcome of the examination will be recorded as one of four possible outcomes:

a) Advance to Candidacy: The Examining Committee recommends that the student be advanced to candidacy immediately.

b) Advance to Candidacy With Conditions: The Examining Committee recommends the student be advanced to candidacy, but will require that the student to meet certain conditions (e.g., such
as minor-to-moderate re-writes or clarifications, the demonstration of effective deliveries of concepts in an independent lecture, etc. that would not require a second oral exam). A student may not be advanced to candidacy unless they “pass” both the written and oral portions of both components (Literature Review and Research Proposal) of the exam.

c) **Continue in Program Without Advancement:** In the case of a student’s first attempt to complete the Comprehensive Exam, the Examining Committee will recommend the student not be advanced to candidacy. The student will be required to re-take either all or a substantial portion of the Comprehensive exam, to be determined by the committee. The committee may also recommend specific conditions the student must first meet as intended to help the student strengthen areas of concern the committee may have following this first attempt. Conditions may take several forms: e.g., additional involvement in research projects, additional coursework, etc.). Graduate Studies Committee policy permits students no more than one attempt to retake the examination, which must be completed within 6 months after the first attempt.

d) **Drop From Program:** In the case of a student’s second attempt to complete the Comprehensive Exam, the Examining Committee will recommend that the student be asked to leave the program. The student may request a degree audit, from the Graduate Coordinator, to determine if a second masters may be awarded for the completed coursework.
Movement and Cognitive Rehabilitation Science Area – Comprehensive Examination
Evaluation Criteria

Both the written and oral exam will be evaluated by the examining committee according to the following criteria. Students are encouraged to structure both their written exams and oral presentations to clearly address the criteria and questions outlined below. However, these stated criteria should not be taken as “exhaustive”. Depending on the specific topics, additional criteria and/or questions may also need to be addressed to comprehensively present your literature review and/or research proposal.

Literature Review:

1. “Big Picture” Question and Significance:
   - What is the larger overall scientific and/or clinical problem or question being addressed?
   - What is the scope of the problem?: e.g., types and/or numbers of people affected; physical, health, and/or economic impact to individuals, selected groups, and/or society, etc.
   - Why is this question scientifically “important” and/or “significant” and thus worth pursuing?

2. Prior Work:
   - What has been done so far to address this question?
   - What research approaches and/or methods have been used to address this question?
   - What have the principle important findings been?
   - How have they advanced our understanding of this problem to date?

3. Current Knowledge Gaps:
   - What are the primary limitations of the research conducted on this topic to date?
   - What are the critical and most significant knowledge gaps that still need to be addressed to advance our scientific understanding?

4. Necessary Next Steps:
   - What specific steps need to be taken next to address the knowledge gaps identified above?
   - If these steps are taken and do adequately address those existing knowledge gaps, how and to what extent will our scientific understanding be advanced?
   - What will be the scientific, personal, and/or societal impact of advancing these ideas?
Research Proposal:
Note: These criteria were adapted from NIH Standard Review Criteria: http://grants.nih.gov/grants/peer/reviewer_guidelines.htm

1. Significance:
   - 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. Investigator(s):
   [Note: Adapted in part from review criteria above and also from review criteria for NIH NRSA individual pre-doctoral fellowships: http://grants.nih.gov/grants/guide/pa-files/PA-14-147.html]
   - Are the applicant's academic record and research experience of high quality?
   - Are the applicant, collaborators, and other researchers well suited to the project?
   - Does the applicant have the appropriate experience and training to complete the project?
   - Does the applicant have the potential to develop into an independent and productive researcher in biomedical, behavioral or clinical science?
   - Does the applicant demonstrate commitment to a career as an independent researcher?

3. Innovation:
   - Does the application challenge and seek to shift current research or clinical practice paradigms by utilizing novel theoretical concepts, approaches or methodologies, instrumentation, or interventions?
   - Are the concepts, approaches or methodologies, instrumentation, or interventions novel to one field of research or novel in a broad sense?
   - Is a refinement, improvement, or new application of theoretical concepts, approaches or methodologies, instrumentation, or interventions proposed?

   - 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?