**COMPREHENSIVE EXAM (IGPBS-NSC)**

# After selecting a laboratory to do their dissertation research (usually at the start of 2nd semester of their first year), the student in collaboration with the mentor will assemble a Dissertation Committee, which consist of the mentor and four additional Graduate faculty members. At least three of these Graduate faculty should be at the Associate or Professor level. This committee will meet semi-annual to discuss the student comprehensive examination, research project and didactic course work.

# After completion of the didactic training (four semesters for traditional IGPBS-NSC students and three semesters for MD/PhD students), IGPBS-NSC students must also successfully pass a comprehensive exam to attain PhD candidacy. This exam must be completed within 2.5 years after joining the Subplan (preferably by the end of year 2).

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# The timing of the comprehensive exam was selected to give students the opportunity to apply for slots on the two Neuroscience T32 training grants (Neuroimmunology of Diseases – PI, Daniel Monaghan and Alzheimer’s Disease and Related Dementia Drug Discovery- MPI, Paul Trippier and Howard Fox), while having the time to apply for their own F31 or foundation award. Each T32 grant have allocations for 4 domestic and one international students per year. The domestic student is paid for by Graduate Studies. There is also the Cognitive Neuroscience of Development and Aging (CoNDA) Center (a collaboration between UNMC, Creighton University and the University of Nebraska Omaha), through which students can attain short-term funding to develop methods, collect preliminary data, etc.

1. The comprehensive examination for the IGPBS-NSC to attain PhD candidacy consists of an oral defense of the research strategy of an NIH-Style research grant application written by the student. The research strategy could be 12 pages + specific aims page (R01). The student’s examination committee (same as the dissertation thesis committee, 5 Graduate Faculty members including the student mentor serving as Chairperson) could recommend an R21 format (6 pages + specific aims page) if they believe it would assist the student with his/her internal/external fellowship application.

The subject matter of the comprehensive examination research grant application must be approved by the student’s examination committee. It could be the student research project, providing that the project is not currently externally funded. If the thesis project the student is working on is part of a funded grant (mentor or student), the subject matter for the comprehensive exam must be on another project (peripheral at a minimum) to the student thesis project. There is a high expectation that the research proposal will explore new areas of research. It must be hypothesis-driven and statistically justified. The proposal should include background, gap in knowledge, preliminary data, hypothesis, experimental design, expected results with statistical approaches, and anticipated problems and solutions.

1. The examination committee must approve the specific aims of the grant application before the full proposal is written. The examination committee must provide critiques of the full application to the student at least one week prior to the scheduled comprehensive examination date. Students should plan to complete his/her comprehensive exam by end of Summer of year 2. The student could apply to the NSC-Graduate Committee for an extension for up to three months extension if health and close family issues arises.

The examination will consist of a closed room oral presentation by the student followed by a questions and answers session, chaired by the Mentor (usually the chair of the committee). Although there is no time set limit for the questioning, it usually lasts between 2-3 hrs. The oral examination will include questions related to the material in the research proposal, but could also include questions related to the student’s area of research interest and graduate course studies, (e.g. neuroscience, virology, immunology, genetics, pathobiology, pharmacology etc). Students must be prepared to be tested on knowledge in areas beyond the research proposal. During the closed-door oral defense, the mentor cannot answer questions for the student. After the questioning period, the student will leave the room and deliberations will start. The mentor will summary the results of examination committee to the student.

1. The Examination Committee will use the Graduate Comprehensive Examination [Rubric](https://www.unmc.edu/gradstudies/faculty-staff/_documents-faculty/examination-rubric.pdf) to determine which level the student is performing.

**Sample Comprehensive Examination Report\***

Committee Member’s Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 1 to 5 scale, 1= strongly disagree, 5= strongly agree, 3 = neutral. Please provide short rationale for scoring. | 1 |  | 2 | 3 | 4 | 5  |
| 1. The student displays a strong general scientific background in their chosen discipline |   |  |   |   |   |   |
| 2. The student displays a strong in-depth understanding of their research area |   |  |   |   |   |   |
| 3. The student displays a strong capacity to think logically and creatively in the construction of experiments and interpretation. |   |  |   |   |   |   |
| 4. The student has strong written communication skills |   |  |   |   |   |   |

1. At least **four** of the five-member examination committee must recommend a pass for the student to pass the comprehensive exam. The results of this exam must be reported to the Dean for Graduate Studies via Seguidor within seven days of completion. A letter will then be sent to the student by Graduate indicating whether to student has attained PhD candidacy and to proceed with dissertation research.

If **two** or more members of the five-member examination committee recommends no pass in a comprehensive examination, the examination will be considered “Failed.” The examining committee will also have seven days to report this to the Dean for Graduate Studies via Seguidor with explanations and the student should be given the option of retaking the examination.

The committee must identify and clearly communicate the areas of weakness to the student prior to re-examination. The second comprehensive exam must be rescheduled no later than three months after the first. If the student did not attain a “pass” on the second try, he/she will be asked to withdraw from the program.

At present, there is no accommodation by the IGPBS-NSC Subplan for awarding a non-thesis master’s degree for a student not passing the comprehensive exam.

1. Suggested timeline/ plan for Comprehensive Exam.
2. Meet with your thesis committee at the start of the 2nd semester of 2nd year and discuss ideas for Comprehensive Exam
3. Send list of possible research topics to the committee by early February and for feedback within two weeks
4. By end of February finalize and topic
5. Start in early March to develop the specific aims around the topic
6. Send Specific Aims to Committee by End of March and request approval within two weeks. Indicate to Graduate Studies your intention to do comprehensive exam.

Set date for comprehensive exam well in advance for end of summer of the 2nd year.