Guidelines for the Presentation of the Dissertation Proposal in the Neuroscience Graduate Program

The overall goal of the dissertation proposal and proposal meeting is to describe a series of studies that, if successfully accomplished and communicated, would lead to the doctoral degree. The intent of this process is to facilitate the formulation of a doctoral research project appropriate for the discipline of neuroscience. This is not an exam; the dissertation proposal process occurs after the student has successfully completed their qualifying exam.

Process: The student will prepare a formal dissertation research proposal and then give an oral presentation of that proposal to the NGP community. The proposal should be submitted to the committee and to the NGP Administrator two weeks before the scheduled oral presentation of the proposal to the Neuroscience community. The electronic proposal will be made available to NGP faculty upon request.

The proposal will be evaluated by the student’s Dissertation Studies Committee, which consists of a minimum of four University of Vermont faculty members, all regular members of the Graduate Faculty. One member is the student’s Dissertation Advisor. The Chairperson must be both a member of the Graduate Faculty and from outside the candidate’s department. While development of the dissertation proposal relies on collaborative discussion with the dissertation advisor, the dissertation committee can provide valuable insight early in the process.

On the day of the presentation, the Dissertation Studies Committee will attend the oral presentation and meet with the student for up to two hours afterwards to discuss and offer constructive criticisms of the proposal. The Dissertation Studies Committee will complete the Dissertation Committee Dissertation Proposal Report, which includes assessment of the proposal as described below. The report will be submitted to the NGP Administrative Office and uploaded to the student’s Tracking Website.

Timeline: The dissertation proposal process occurs after the student has successfully completed their qualifying exam. Since the qualifying exam should be completed by the end of the Spring semester of the second year (4th semester), we strongly suggest that the proposal be submitted in the Fall semester of the student’s third year (5th semester). However, because significant preliminary data is required, the timing of the dissertation proposal is flexible.

Assessment: The dissertation committee will be asked to provide a written assessment of the oral and written portions of the proposal, and to assign one of the three following outcomes by majority vote:

- Approve – the proposed studies describe a series of studies that, if successfully accomplished and communicated, would lead to the doctoral degree. The proposal is well-written, requiring no change.

- Conditionally approve with the addition of recommended changes, the proposed studies describe a series of studies that, if successfully accomplished and communicated, would lead to the doctoral degree. The record of proposal defense must indicate exactly what the student must do to move from a “conditional accept” to “accept”. The student has one month to make the changes. When acceptable, the Chair of the Dissertation Studies Committee will provide a revised record of proposal defense to the NGP Curriculum and Tracking Committee Chair.

- Serious reservations: the proposal describes a series of studies that are fatally flawed, too risky, too descriptive or not related to neuroscience. The student must work together with the mentor to revise and add new aims. The newly written proposal must then be presented to the committee within a timeframe determined by the committee. Two months is recommended.

Execution of the proposed research: The research proposal will serve as a “roadmap” for the student and their mentor for their research. It is recognized that research is an evolutionary process. Changes in the

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proposed studies will be evaluated and approved by the Dissertation Committee in regular semi-annual meetings.

Guidelines on the format of the written proposal:

We strongly recommended that this proposal form the basis for grant applications to extramural funding agencies, for example an NSRA proposal to the NIH, although you may use another agency’s predoctoral application form with approval of your Dissertation Committee. If you have previously written a grant to an external funding agency on your project, you can use whatever portion of that grant that you, and not your advisor, produced. That can be hard to determine in some cases since students sometimes rely a bit too heavily on their advisor’s input, either in the form of using near verbatim portions of older grants, or by relying entirely on the advisor for conceptual content. The result can wind up being too excessive an amalgam of their work and their advisor’s. The proposal you write should, to as great an extent as possible, reflect your thinking and writing.

The following is a good general format to follow: The research proposal that you submit to your dissertation committee should consist of a one page “Specific Aims” followed by an “Approach” section. Typically, the entire proposal is in the range of 6-12 pages (not including refs). The Approach section should describe how the research will be actually carried out. It should include an initial concise background section that is linked directly to your specific project. Use it to build an argument for your project and give the reader what they need to know, but not more. The next section should be a description of the experiments and methods you will use to accomplish each specific aim. Generally, each aim is handled separately. Start with an overview of the experimental design for that aim, and then go into a description of each individual experiment you plan to do for that aim. When possible try to put your choices of experiments in context of a bigger picture, for example by emphasize why the approach was chosen over other possible approaches (i.e. microscopy vs flow cytometry vs. western blot). Be sure to include enough methodological details that your committee will have a clear idea of what the experiments physically entail. It is also critical to discuss exactly how you are going to quantify and analyze the data that you collect. What will your sample sizes be? What statistical tests will you do? That section is then followed by a discussion of the expected results, potential difficulties and limitations and alternative approaches you might use if an approach does not work for technical reasons or if you get unexpected results. The discussion of limitations and alternative approaches is an important section and should not just be a few throw-away sentences. In fact, it is an ideal place to demonstrate the depth of your thinking on the project. Finally, include a brief but realistic few sentences on your projected timeline. That can be given at the end or can be integrated into the Approach section.

Inclusion of your preliminary data is an important component of the proposal because it is the major indicator of whether the work is feasible. You can incorporate that data into your Background or Experimental Approach sections as you see fit.

The primary thing to keep in mind is that you want this document to be something that your committee can use to understand what you actually plan to do. Please keep in mind that your committee meetings are not tests but are instead opportunities for you to get critical feedback on your project. The focus and fine-tuning that your committee can give could save you a great deal of time and effort in the long-term. That can only happen if you give them something they can work with. That is why it is important to provide enough experimental detail for the committee to be able to give meaningful input. Be clear about procedures while avoiding descriptions of standard lab techniques. Be especially clear about identifying experimental controls, analysis methods, statistical methods, expected results and anticipated problems.

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