**Dissertation Defense Summary**

The purpose of this document is to provide a succinct, one-page description of what you have accomplished through your research. From this document, your committee should have a clear understanding of the contributions you have made. As in the Proposal Summary, provide a clear statement of the problem you will address, along with your overall objective or hypothesis. It may be appropriate to use the exact text of the Proposal Summary; it should, at least, look similar in format. This introductory paragraph should be followed by descriptions of what was accomplished with respect to each of the specific objectives. You should also note the status of any manuscripts or publications associated with each. The final paragraph should, as in the Proposal Summary, describe the contributions and intellectual merit of your overall work. The overall document will likely be very similar to what was included in the Proposal Summary, except that the focus is on what you have accomplished rather than on what you plan to accomplish.

Along with the summary, a separate page should be attached specifically listing research deliverables resulting from your work, including publications, abstracts, presentations, patents, etc. Include any pending deliverables, along with their status.

DISSERTATION DEFENSE SUMMARY SAMPLE

(actual document should use a full page to be complete)

**Dissertation Defense Summary: A New Approach for Head Protection in Sports**

Jane A. Student

Traumatic brain injury (TBI) is a devastating health problem worldwide. Many of these injuries occur during sporting events such as American football. In many cases, helmets are effective at reducing impact severity by limiting skull deformation and reducing peak acceleration (by lengthening impact duration). Unfortunately, most impacts also include angular acceleration components that, even with helmet use, exceed the tolerance level of underlying brain tissue. Recent work in our laboratory has demonstrated that interactions between magnetic fields may be used to limit motion between two bodies, with specific capability for limiting impact forces. The overall objective of this project is to develop and implement a new head protection system for American football that relies on this magnetic field technology. This objective will be accomplished through the three specific aims outlined below.

**Aim 1: Develop a helmet liner that effectively reduces impact forces between two helmets.** *We hypothesize that the advanced material we’ve developed will reduce helmet impact forces by 50% compared to helmet impacts without the liner.* Work in our lab has shown that … In order to further this work, we altered the computational model to predict the outcome of experiments conducted using a drop tower. Results showed … This work was published in the *Journal of Amazing Magnetic Stuff* in January of 2012.

**Aim 2: …**

**Aim 3: …**

This work has developed a more sophisticated understanding of the complex interactions between magnetic fields and materials. The improved computational model and developed helmet liner … Findings from this work are already being applied to improve the safety of American football, particularly with respect to head and neck injuries. Using this new technology, …

**Dissertation Defense – Research Deliverables**

*Journal Publications*

Student, J. A., Colleague, A., Advisor, T., 2012. A new helmet liner for improved safety in American football. *Journal of Amazing Magnetic Stuff* 10(4): 56-72.

Student, J. A., … (accepted for publication but not yet assigned to an issue)

Student, J. A., … (under review)

*Conference Papers*

Student, J. A., Advisor, T., 2011. Modeling interactions between magnetic fields. Presented at the 7th Annual Magnetic Devices Conference, San Diego, CA.

*Abstracts*

*Talks*