1. In a one-to-two page narrative, briefly describe your project. Please include the date(s), location, and names of important members of your project.

2. In the narrative, briefly describe which of your project objectives you feel you met.

3. Include in your narrative a discussion of what parts of your project will be implemented in your classroom, in your scholarly research or publication, and/or your civic work. You may want to consider discussing the methods you will use to implement your stated objectives in your classroom, research, and/or civic work as well.

4. Include in your narrative “unexpected surprises” from your project, or disappointments. Was this a project that you would consider again proposing for a FD grant? Why or why not?

From November 15th through November 19th, 2008, I attended the Society for Neuroscience annual convention held in Washington, D.C. As this event represents the preeminent worldwide conference in my field, I regularly attend and present my research findings to the scientific community. This year, over 31,000 scientists, visitors, vendors, and press attended the conference.

I had several specific objectives to accomplish this year. Following is a list of each objective, its outcome, an evaluation of success, and an indication as to how I will implement the information to facilitate teaching and/or research:

- **Objective A: Disseminate novel research findings to interested members of the neuroscience research community.**
  - Outcome: I presented a poster of my dissertation research titled “Alteration of dendritic spine morphology in prefrontal cortex following cerebellar dentate nuclei lesions in rat” during a four-hour session on Saturday, November 15. During my session I received a steady flow of interested visitors, and many requested reprints of the poster and my dissertation (for more detail on the results and methods).
  - Evaluation: Objective successfully completed.
  - Implementation: I can use this experience as an example to illustrate research presentation in a professional context to students. Over winter break I will place my poster on an appropriate wall for students to view.

- **Objective B: Evaluate research of techniques related to teaching of neuroscience and related fields (e.g., Biopsychology).**
  - Outcome: I attended several poster and presentation sessions dedicated to the teaching of neuroscience. Several specific techniques piqued my interest, including:
    - Using a wiki software platform to engage students in collaborative note-taking.
    - Incorporating blogging into instruction as a tool to facilitate discussion and engagement with course material.
    - Employing distance-learning technology to connect with other researchers. In particular, this was presented as a method to allow students the opportunity to interact directly with the primary author of a research paper under review by the class.
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✓ Evaluation: Objective successfully completed.
✓ Implementation: At this time, I am particularly interested in employing the use of blogs and wikis in instruction, and I am planning on incorporating both into one of my spring courses on a trial basis. It appears as though Blackboard offers both features, so implementation should not be terribly difficult. Once I have the kinks worked out of these tools, I will tackle the distance-learning technology in an appropriate course, hopefully within the next year.

- Objective C: Evaluate current research results of studies employing techniques related to my areas of interest including photobiomodulation, oxidative stress, mitochondrial functions, neurodegenerative disorders, and aging.
  ✓ Outcome: Much of my time was spent at posters and presentations of research evaluating one or more of these areas of interest. Most of the research was directly related to studying the roles of oxidative stress in mitochondrial function and dysfunction, neurodegenerative disorders, and aging. I learned more about several techniques of inducing, ameliorating, and measuring oxidative stress. I also visited a couple dozen vendors and obtained literature on their wares related to these techniques; I am currently in the process of sorting through this information to make a purchasing decision based on my research plans. Additionally, I purchased some reference books from various publishers, which I am also in the process of digesting.
  ✓ Evaluation: Objective mainly successful, and remains in progress: I obtained a copious amount of information to sort through to inform my decision on specific techniques appropriate for my research design and model organism.
  ✓ Implementation: The information garnered from these experiences will directly influence the nature of research in my lab, and as such will influence the experiences of my undergraduate research assistants. I am in the process of selecting appropriate techniques and will begin working with undergraduates in my lab next semester.

- Objective D: Evaluate federally funded grant programs from organizations including the National Institutes of Health (NIH), National Institute of Mental Health (NIMH), and the National Science Foundation (NSF) that would be appropriate for my research plans, including those designed for new faculty.

- Objective E: Evaluate grant programs as in (d) that are designed for small colleges or colleges underrepresented by federal research funds.
  ✓ Outcome (D & E combined): I met with representatives from NIH, NIMH, NSF, and several additional organizations to explore extramural research funding opportunities. I received a wealth of literature from these organizations outlining the various grant programs, and am in the process of evaluating this material in detail. Through my conversations with the representatives, I am particularly exploring the following options, with the goal of submitting an application for one or more by the end of summer, 2009:
    - Faculty Early Career Development Program (CAREER), via the National Science Foundation (NSF)
    - Research in Undergraduate Institutions (RUI), via NSF
    - Academic Research Enhancement Awards (AREA), via one of the NIH satellite organizations (e.g., NIMH, NIA, NCCAM… to be decided upon following additional consultation)
    - Career Development Awards (K series), via one of the NIH satellite organizations
Evaluation (D & E combined): Objective successfully completed.

Implementation: I plan to apply for one or more grants within the next eight months; success will provide monetary support for my research program to fund equipment, time, and student compensation. My focus will be to acquire funds that will provide Viterbo with the support necessary for many students to engage in research.

Objective F: Discuss microscopy details and options with the various optics vendors, in order to wisely invest the start-up funds granted to me through Viterbo earmarked for a new stereo microscope for use in my research and the research of my Viterbo colleagues.

Outcome: I met with representatives of Olympus, Leica, Nikon, and Zeiss, and viewed and interacted with the model microscope systems each had available. Standard procedure for microscope purchasing involves an on-site demonstration, so each company promised to contact me to establish a time for them to visit campus with a system specifically designed for my needs. Thus far, three vendors have contacted me and one has visited campus to provide a demonstration; I am in the process of establishing times to meet with the others over winter break.

Evaluation: Objective successfully completed insomuch as I was able to meet with the vendors, but remains in progress as far as selecting a particular rig is concerned.

Implementation: I am working with other interested faculty, mainly in the biology department, on the selection process. My goal is to acquire a microscope within our financial constraints that will meet as many needs as possible, as the equipment will be shared. Not only will the selected equipment facilitate my research, but also the research of several other faculty, all of whom work with students on individual research projects. The microscope will also be used as a teaching tool, both in research projects and in the classroom: the microscope we select will have a camera with the ability to display on a computer or overhead screen, so that the entire classroom can see what is under the objective lens.

I regularly attend the Society for Neuroscience annual convention, and as far as research coverage is concerned it never disappoints: in the realm of neuroscience research, this convention remains peerless. Additionally, this conference serves as a centralized resource of appropriate grant agencies, avenues and representatives, as well as appropriate vendors and publishers. As such, I will always consider this opportunity as appropriate for a Faculty Development Grant and plan to continue my attendance. However, I was a bit disappointed at the relatively scant offerings in terms of neuroscience teaching methods this year. Most of the posters and presentations on teaching focused on instruction at the high school or younger levels, with little devoted to techniques more appropriate for college-level instruction. As such, I plan to seek out additional opportunities to acquire such information.

As a closing statement, I’d like to express sincere gratitude for the Faculty Development Grant. The funds provided greatly assisted in covering the costs of the conference, and I’m certain that my experiences will greatly augment my teaching and research capabilities.