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Beckman Scholar 2007-08

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My Experience as a Beckman Scholar at UK

With a physicist for a father and a biologist for a mother, it could be argued that I was genetically predisposed to excel and take interest in the sciences. Yet it wasn’t until my undergraduate experience at the University of Kentucky that I felt challenged and encouraged to realize my potential. After taking an introductory biology course, a professor of mine encouraged me to pursue scientific research. With the summer approaching, he made arrangements to get me a research project working in the Department of Internal Medicine at the Kentucky Clinic. In this exciting project, I worked in collaboration with post-doctoral scholars to explore changes in VLDL, LDL, and HDL lipoprotein composition and how these changes relate to the development of atherosclerosis. While I started out only performing biochemical assays and lipid analyses, my efforts were soon recognized and I was encouraged to play a larger role in the laboratory, most notably in the characterization of acute phase protein Serum Amyloid A and Cholesteryl Ester Transfer Protein (CETP). It was this experience that initiated my interest in the world of research, and proved especially beneficial in preparing me for more independent research endeavors that would follow.

As my study of biological science at UK progressed, I began to take particular interest in the human central nervous system, and felt compelled to find a lab that studied diseases and dysfunctions of the human CNS. After exploring a few labs, I met with Dr. Diane Snow in the Department of Anatomy and Neurobiology. I began working in the Snow lab in January of 2007 on a project evaluating neuronal responses to glial chondroitin sulfate proteoglycans. I was immediately encouraged by Dr. Snow’s tremendous support and concern with the science I was conducting. After a few months of working in the lab, Dr. Snow gave me a related project to conduct independently. She also encouraged me to apply for the Beckman Scholarship award for my work on this project, an award I received in April, 2007.

Since then, I have made a tremendous amount of progress in this investigation. I have worked to refine some of the more fundamental aspects of the project, including the thorough development of a quantitative component, and have made key changes in experimental design. Such changes have led us to a new and improved approach to data analysis. In addition to technical progress, I have also sought to make the project particularly streamlined and amenable to assistance by other students who enter and leave the lab. These efforts have proved useful, as I have had the pleasure of training high school, undergraduate, and graduate students to work on various aspects of this project.

My experience doing research as a Beckman Scholar has had a profound impact on both my scientific and personal development. With regard to scientific matters, I am much more confident and have a new sense of initiative in the laboratory. This program has also fostered my innovation and has allowed me to give lasting contributions to this project. I am also grateful to the Beckman Foundation for supporting my travels to several scientific conferences throughout the United States. These experiences have provided for scientific collaborations and other unique opportunities. For example, I attended 12th International Symposium on Neural Regeneration (ISNR) in California this past December, 2007, where I was the first undergraduate to attend and present in the history of the meeting. As I prepare for my study of medicine in the fall, I know that the critical thinking and analytical skills I have developed...
in my experience as a Beckman Scholar will serve me well in both the clinical and research components of my career. (For a formal presentation of his research, see Kobraei’s article on p. 101 this issue of Kaleidoscope.

Presentations & Conferences:

Research Awards as Beckman Scholar:
Oswald Research and Creativity Program Award: Honorable Mention Biological Sciences
International Symposium on Neural Regeneration (ISNR) 2007 United Spinal Association Poster Award finalist

Research Manuscript in Preparation: