Summary of Experience

I came to the Research Scholar Program knowing that I would like to be a surgeon, but unsure of a specialty. I am leaving with a much more concrete understanding of one possibility. The most interesting thing was scrubbing in for knee and hip replacements and revision, knee arthroscopies, an ACL replacement, and the insertion of a tibial rod. Observing Dr. Ververeli and his surgical team was something I will never forget and the excitement of the OR will surely propel me through tough times in medical school. I learned a lot about joints (particularly the hips) and research techniques from both of my mentors. Dr. Ververeli and Cherie Tyler, RN also taught me about patient care. Their simple tips will help me lead a successful practice one day. I am grateful for their mentorship and the invaluable lessons they have taught me that extend beyond classroom or textbook instruction.

Summary of Research

At Valley Sports and Arthritis Orthopaedics, I worked specifically on a project entitled “Total Hip Early versus Standard Post Operative Rehabilitation Trial” (The Sport). Total hip replacements are a common procedure for the treatment of hip arthritis. Typically, patients that undergo a primary hip replacement must abide by hip restrictions after surgery. These restrictions include: abstaining from riding or driving an automobile, sleeping in the supine position with a pillow between the legs, using an elevated toilet seat and chair, and avoiding flexion of the operative hip past 90 degrees or adduction past 5 degrees. For most patients these restrictions are observed for two to three months, which is the most critical time in the prevention of dislocation of the prosthetics and instability of the hip. However, it can be costly to the patient because of extended work leave and the purchase of extra equipment.

Dr. Ververeli and his team hypothesized that since certain techniques and selections at the time of surgery focus on reducing complications, there is no need for these hip restrictions. The team at VSAS Orthopedics designed an IRB-approved study to evaluate the safety and effectiveness of a
rehabilitation protocol that does not include traditional post-operative guidelines. Eighty-five patients were randomized into two groups; one group to follow the standard rehabilitation methods and the second group had no restrictions on their range of motion or activity. The goal was to find a method of treatment that would accelerate the patients’ return to activities without increasing risk.

The safety of the accelerated treatment was evaluated by the incidence of dislocation. There were no dislocations in either group and therefore we could not make any statistical conclusions regarding that particular outcome. The effectiveness of the different protocols was further measured by the mental and physical health of the patient (evaluated by a generic, well-validated surveys), and the speed of the patients’ return to daily activities. We found that the pace of recovery between the two groups was statistically significant with at least a power of 61%. Patients in the early rehabilitation group started driving ($p = 0.02$) and ambulating with only a cane ($p = 0.03$), without a cane ($p < 0.001$), and without a limp ($p = 0.003$) earlier than patients in the standard group. However, on all other measures the two groups recovered the same. In other words, the standard group was restricted from actions that were within their mental and physical capacity. We thus concluded that proper size selection and surgical technique alone are sufficient for dislocation prevention.

I had several roles in The Sport. I tabulated the data collected by the research coordinator, calculated statistics and survey scores, researched background information from recent literature, and then wrote the manuscript. Following extensive review with my mentors, I submitted the manuscript to the Journal of Orthopaedics. I am glad I had the opportunity to work on this trial, which will have a great impact on this community. Lehigh Valley Health Network serves an aging population with 37% of its members above the age of 45 (data from 2000 Census). This translates to an increasing need for an economical and swift recovery for a disease that targets an aging demographic. Improving patients’ recovery will also dramatically impact the national population with the number of hip replacements conducted annually rising from 2000 to 2006 by 52%. Perhaps it will also inspire surgeons in other fields to test the effectiveness of traditional methods.