Summer Research at Semmelweis University Medical School
Budapest, Hungary
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The Research Project: Nanomechanics of the Giant Protein Titin
The Research Project

- study the unfolding and re-folding process of the muscle protein titin by stretching with optical tweezers
- Titin is a linear molecule composed of many globular domains and unique sequences
- Titin is responsible for generating passive muscle force
The Optical Tweezers
The Optical Tweezers: How it Works

• By catching a single titin molecule between two beads we were able to stretch and release the molecule with nanometer precision.

• The molecule will unfold during the stretch phase and refold during the release.
Most Rewarding Aspect

• I was able to experience working in a laboratory environment with top scientists in their field of research
• Had the opportunity to see and use state of the art technology in an interesting project
• Not only was work rewarding but the mentors were welcoming and accepting creating a wonderful environment both in the lab and out of it
Budapest became my home for the summer...

Although I had the many opportunities to travel...
Impact to the University

• The project I was a part of is in its initial stages: I assisted in gathering initial data through active involvement in the project

• The information we accrued during the summer will provide a base for my mentor to build off of as the project continues
My Future Academic Choices

• I had never considered pursuing research after college until I completed this internship. Now that I have experience in a laboratory setting I am considering a research job before attending medical school.
Concluding thoughts

• This was an incredible internship and given the opportunity I would encourage any student to accept this placement

• Travel and/or work abroad are a priceless experience for anyone

• I learned how to live on my own and was immersed in many different cultures throughout the summer