

Bradley Bowles

Graduation Year: Junior

College: Science

Major(s): Biological Sciences

Minors(s): N/A

Scholar Group Membership: N/A

Did you received other funding for this project?: I received funding from the career center

Could you have completed this project without CUSE funding? No

More details on CUSE funding assistance?

Project Title: Cardiofibroblast Growth within Methacrylated Gelma Substrates

Project Location: Zorlutuna Lab, Notre Dame

ND Faculty Mentor: Dr. Pinar Zorlutuna

Project Type: Research Assistantship

Why did you undertake this project/experience? Deepen your knowledge of a topic or issue, Research/experience necessary for senior thesis or capstone project, Prepare for graduate school (MA or PhD), Career discernment and/or preparation

Did your funded experience help you:

[Deepen your understanding of your coursework or field of study]: Very Much

[Discern your interests and post-bac goals]: Yes

[Become confident in your ability to set and achieve your goals]: A Little

[Gain a more nuanced view of local, national, or global communities]: Not Applicable

[Improve your written and verbal communications skills]:A Little

Tell us about your experience.

I worked in the Zorlutuna bioengineering lab at Notre Dame. I performed research into heart cell biology. I attempted to determine the optimal substrate stiffness for cardiac fibroblast growth, and attempted to adjust the Zorlutuna lab's perfusion system to optimize endothelial cell growth in microfluidic devices. This work was done to prepare me for a further research project this semester, in which I will be attempting to analyze the migration of Endothelial Progenitor Cells (stem cell derivatives in the human body that repair vascular injury) in microfluidic devices. I gained a great deal of experience with bioengineering research techniques, and I am more confident in working independently and conducting my own research as a result. I worked with microfluidic devices over the summer, and learned a great deal about manufacturing these and growing cells in them. I also did a large amount of cell imaging, and learned a great deal about staining and imaging techniques.

Describe the impact this project had, both on you as a student-scholar and on the people you worked with.

This project taught me a great deal about bioengineering research techniques. I am now much better at working with microfluidic devices, culturing and staining cells, imaging cells and

