

I am Paul Murdoch and I am a physics and an applied math & statistics double major at Stony Brook University. After taking a computational physics and an introduction to python course I found that I rather enjoy programming. In those courses I learned C++, Fortran, and Python, where I learned to apply those skills to both physical applications and more abstract problems. My freshman year I visited the LTC with an interest of learning about optical tweezers. This led to me being a part of the 2020 LTC URECA summer research program. There I performed experiments with thin lenses to enhance my optics knowledge and experience. Due to the pandemic, I became among the first to perform experiments remotely from my home.

For the 2021 LTC URECA summer research programming I am combining my passion for programming with my experience studying vibration and wave phenomena. I am currently working on studying the chaos of multi-pendula. The simulations are created numerically with Python and animated with a package called Manim.

Code for the project is available at <https://github.com/PaulCMurdoch>