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Brandon Niese | Biophysics: Fabrication and Testing of Microconstriction Array Microfluidic Devices for Characterizing Cancer Cell Mechanical Properties

April 10, 2017

Categories: Research

Tags: Brandon Niese, David F.J. Tees, David Tees, Physics and astronomy internships, physics and astronomy news, physics and astronomy research, undergraduate research, undergraduate summer internship



Brandon Niese

Brandon Niese '19 presented “Biophysics: fabrication and testing of microconstriction array microfluidic devices for characterizing cancer cell mechanical properties” at the 2017 Ohio University [Society of Physics Students](#) Research Conference in March.

Niese is an Engineering Physics major in the Honors Tutorial College. He worked in [Dr. David Tees'](#) biophysics lab. He learned and adapted photolithographic techniques for making microfluidic devices and made single channel devices and also troubleshoot issues with making multi-channel devices. Niese perfected protocols for filling the channels with fluid, as well as assessed the flow rates in the channels as a function of pressure using video microscopy. He continued work started by graduate student Saroj Dhakal on using the image processing package ImageJ to track cells as they travel through the channels.

“I learned the basics of biophysics and how a professional biophysics lab runs,” Niese explains. “Also I learned how to manufacture microfluidic devices that can be used to probe cancer cell mechanical properties. I met daily with Dr. Tees throughout the summer. I love research. The idea of gaining knowledge for the sake of increasing scientific knowledge is very appealing to me. I would highly recommend interdisciplinary research because it widens your perspective and it’s also a lot of fun meeting new people.”