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9-8-2023

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Recommended Citation

Laudert, Lexus, "Black Has Positive Summer Experimenting in Physics Lab" (2023). *Campus News Archive*. 3489.

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UNIVERSITY OF MINNESOTA
MORRIS



Black has positive summer experimenting in physics lab

By Lexus Laudert

(September 8, 2023) Kara Black '23, Lakeville, spent this past summer putting the final touches on a physics major at the University of Minnesota Morris, with a project that will benefit incoming physics students.

"I needed a few more credits so I met with [Professor] Sylke [Boyd] and she suggested doing a directed study to develop experiments for the Modern Physics course."

The directed study included many of the lab experiments that students will take as part of the Modern Physics course, including the Michelson interferometer and speed of light in air experiments, as well as the hydrogen spectrum experiment and the electron diffraction experiment.

“Changes in faculty over the past couple years has resulted in a loss of documentation and faculty expertise. The goal is to have documentation about what experiments belong to the course, the equipment for them, their pitfalls, as well as the location of the equipment and data and error analysis.

In order to create a lab manual, Black performed all of the experiments herself and documented both the basic principles and best practices for each piece of equipment and experiment.

Black was excited to do this directed study for two reasons.

“I really enjoyed the labs when I took the course. They are really fun and cool to look at. Also, I want to become a physics teacher and I get some of that teaching aspect by creating the manual.”

Boyd noted that these experiments are versions of classic experiments from the early 20th century that lead to our current understanding of quantum mechanics, theory of relativity, nuclear physics, and solid state physics.

Black was a transfer student and felt that her Morris experience made a difference. She was glad that she made the move and had a glowing review about her time at Morris.

“I really love how students are heavily involved in everything and have significant influence on how things are run. A school should care about and be for its students. We have a really good LGBT community here that is supported by the community, staff, and other students. Morris is way ahead of the curve.”

Black plans to work as a substitute teacher in high school physics or math while finishing her teaching licensure.

