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Protein Research Aims to Innovate Biology

CEDARVILLE, OHIO – A group of student researchers at Cedarville University are hoping their recent work will prove to be innovative in the field of biological sciences. Led by Heather Kuruvilla, Ph.D., professor of biology, the researchers are studying *Tetrahymena thermophila*, a single-celled organism commonly found in freshwater ponds.

The research, which focuses on the presence of proteins in *T. thermophila* and their subsequent role as a chemorepellent in the organisms, could lead to advances in cancer research. Netrin proteins act as biomarkers in certain types of cancer.

Chemorepellants and chemoattractants are responsible for cellular movement called chemotaxis, which is the movement of an organism in response to chemical stimulus. In single-celled organisms, such as *T. thermophila*, chemoattractants help the organism find food, while chemorepellants act as a warning that a predator may be near and help the organism move away from the threat.

The proteins that Kuruvilla and her team have found in *T. thermophila* are similar to the netrin family of proteins, which have roles in human development and cancer progression, and have previously only been seen in animals.

If the netrin-like proteins found in the *T. thermophila* do indeed mirror those found in animals, it would make research on cellular development much more accessible.

“It’s quite costly to get netrin proteins in hand to study,” said Kuruvilla. “But if what we’re seeing in *T. thermophila* can act as a substitute for those proteins, it would definitely open the door for more research into cellular development and cancer progression and could lead to many breakthroughs in the field.”

Located in southwest Ohio, Cedarville University is an accredited, Christ-centered, Baptist institution with an enrollment of 3,711 undergraduate, graduate and online students in more than 100 areas of study. Founded in 1887, Cedarville is recognized nationally for its authentic Christian community, rigorous academic programs, strong graduation and retention rates, accredited professional and health science offerings and leading student satisfaction ratings. For more information about the University, visit www.cedarville.edu.