RNA Institute Undergraduate Researcher’s Gene Study of Type 2 Diabetes Receives Project of the Year Recognition at Albany College of Pharmacy and Health Sciences

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Breann Litwa, a recent graduate of the Albany College of Pharmacy and Health Sciences (ACPHS) Bachelors in Health and Human Sciences (HHS) program and undergraduate researcher at UAlbany, has been studying the genetic risk factors for Type 2 Diabetes at The RNA Institute in the lab of Dr. Paul Agris.

The Cdkal1 protein Litwa studies is a methylthiotransferase — an enzyme that catalyzes the ms²tA modification at position 37 of tRNA Lys(UUU). Mutations in the gene for Cdkal1 are a genetic risk factor for Type 2 Diabetes. The gene is one of the most reproducible genetic risk factors for Type 2 Diabetes, which is extremely prevalent in the U.S.

“By studying this gene we can determine the function it plays in causing someone to develop diabetes and figure out ways to prevent, treat, and cure it.” Litwa explains.

Litwa completed the ACPHS Health and Human Sciences Capstone course this spring before taking her degree conferred on May 13. She was able to use her research in genetic risk factors of diabetes prevention as her health related project requirement. The capstone experience is a health related project or experiential learning that synthesizes student training with practical real-world experiences in either applied public health clinical, research, or community-based experience.

Students must also present what they have learned to the Human Health Science community and start by giving a three minute “teaser speech” at the beginning of the semester. Litwa later presented a poster entitled “The ms2t6A modification at position 37 of tRNA Lys(UUU) by Cdkal1 and its relation to Type 2 Diabetes” as part of the full delivery of her project. Participants in the capstone class decide who among them had the best project and Litwa’s was voted Outstanding Capstone Project of the Year for 2016 – 2017.

“Though I wasn’t expecting some incredible revelation or breakthrough in my project, I was still incredibly proud of all the work I had done. I was actually more impressed with the lessons I’d learned and [knowledge] gained.” Litwa says of her capstone experience.

“At first I was afraid to take on this research because I didn’t think I was smart enough and thought it would be way over my head. I challenged myself to take it on anyways and learned a lot about Cdkal1 and lab procedures
at The RNA Institute. More importantly, I learned to step out of my comfort zone. The skills I learned will all be incredibly useful for my future as a medical student. The capstone recognition was very timely and I am now confident I can pursue future endeavors no matter how daunting they seem.” she adds.

Litwa stayed on the HHS pre-med track and will start applying to medical schools in June. She has a strong passion for patient care and ample experience working in the emergency department at St. Peter’s Hospital. She plans to continue her work in with St.Peter’s and has also taken a position as a scribe at Malta Med Emergent Care.

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