June 12, 2020 — Utah State University graduate student Motasem Abualqumboz is being recognized by an international organization for his research into Northern Utah’s air quality problems.

Abualqumboz is a master’s student in the Civil and Environmental Engineering Department. Under the direction of Associate Research Professor Randy Martin, he studies the formation and magnitude of ammonia in vehicle emissions. Ammonia is an important pollutant in the region because it contributes to the formation of Utah’s wintertime PM2.5. However, scientists and engineers still grapple to understand how and how much ammonia forms in mobile emissions. Martin and his research team have been studying atmospheric ammonia for more than a decade.

Abualqumboz is leading a new ammonia study involving vehicle fleets in Northern Utah. This time, researchers are measuring ammonia alongside other, more commonly measured emissions including oxides of nitrogen, carbon monoxide, hydrocarbons and carbon dioxide. Ammonia emissions are measured in real time using pollution monitoring systems and specialized sensors mounted inside the vehicle’s tailpipe.

“By comparing the formation of these different types of emissions, it’s possible we can identify a relationship between them and better understand what leads to the formation of ammonia,” said Abualqumboz.

For his ongoing work in air quality, Abualqumboz will receive a $2,000 scholarship from the Air & Waste Management Association. He will also be honored at the organization’s 113th annual virtual meeting in July.

“I am thrilled to be selected for this award,” he said. “It means a lot coming from such a well-known organization in the field of air quality, and I think it helps demonstrate the importance and impact of our work.”

Contact: Motasem Abualqumboz, m_abualqumboz@hotmail.com

Writer: Matt Jensen, matthew.jensen@usu.edu, 435-797-8170