ROBOTICS ENGINEERING PROGRAM PRESENTS
Car-Snow Clearing Drone
MQP Preliminary Design Review

THURSDAY, DECEMBER 5, 2019
10:00 AM – 11:00 AM
OLIN HALL | RM. 109

Abstract: In the wintertime, snowfall can cause a number of serious, dangerous conditions across the world. Specifically, snow on cars and roads is a big hazard for all drivers. Removing snow from cars is an unappealing, time-consuming, and potentially dangerous task. There are multiple consumer sprays and online recipes for homemade solutions that are manually sprayed on the windshield of a car to remove snow and ice. Additionally, research conducted about drones' role in replacing manual labor tasks shows that there are examples of drones clearing snow from tall wind turbines, to removing moss from roofs with a fluid. As the popularity of drones available to consumers rises, there is a distinct gap in his space for a drone solution that homeowners can use to clear their car of snow to save time and remain safe from the cold weather. While many agriculture and cleaning drone platforms allow for users to spray liquids, they are not specifically designed to spray deicing fluid on cars in cold conditions. This snow-drone unmanned aerial vehicle is specifically designed to spray dehysing fluids in cold conditions on cars. The goal of this project is to design, manufacture, and implement a drone to aide consumers in the removal of snow off cars. The project focused on collecting case study data of different drone design and applications, designing the mechanical, electrical and computer system for the of the unmanned aerial system, testing and evaluating the accuracy, repeatability and precision of the removal process and presenting a comprehensive design summary with a compelling vision for the future of drones aiding society, specifically in the consumer space.

Team Members: Matthew Burd, Bailey Joseph, Drew Robert, Gabriel Rodriguez, Nicholas St. George

Advisors: Profs. Mehul Bhatia (primary) and Nicholas Bertozzi