**Autonomous Response Drone**

**Team A1**

**Abstract**

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Security is always a growing threat in both the digital word and the physical world. There are thousands of college campuses across the nation that are too large to be practically patrolled by people which is why they have panic buttons located throughout many campuses located on security pillars. The project is designed to help people who are on the verge of being in a harmful situation. This is where our project comes in, we are going to design and build a drone that would launch and go to the security pillar on which the panic button was triggered. The drone will be equipped with a video camera, sirens, and lights to cause as much attention as possible. The drones will be stationed around campus on charging stations while it is idle and will use a GPS module to locate the pillar it needs to go to. With advanced quadcopters reaching speeds of over w50mph we can cut the response time significantly by releasing a drone to that location before the authorities arrive.

The drone itself will be built using the Raspberry Pi Zero W Microcontroller with a skeleton case for the quadcopter(drone). There will be four motors that we will need for the four propellers. More importantly we need the quadcopter to communicate with the panic buttons on the security pillars so it knows which location to go to. The communication will be done using a back-end server that would then alert the closest drone stationed near the panic button that was triggered.