Developing a Bluetooth Enabled Pill Dispenser

Arner, David (School: Roanoke Valley Governor's School for Science and Technology)
Brydges, Grady (School: Roanoke Valley Governor's School for Science and Technology)

There is a growing crisis of opioid abuse in the U.S.The CDC reported over 65,000 drug overdoses in 2019.This project aimed to reduce the severity of this crisis by guaranteeing prescription adherence and preventing others from accessing a patient's medication.The project also aimed to allow doctors to have accurate records of patient medication intake, which is a valuable resource for bettering medical records and providing care for a patient.The goal of the project was to design a pill dispenser that connects to an app.The app requires a username and password and only dispenses at scheduled times. SolidWorks was used to construct the dispenser and Visual Studios and Arduino were used to code an app that allows remote access. This will limit who is able to access the pill and the times at which the pills are accessed. The current model functioned successfully as the lock mechanism prevented removal of the sheath and the app communicated via Bluetooth to the internal stepper motors, which dispensed the pills.The bottle’s mechanics functioned well on their own. In the future, the dispenser will be reduced in size and the code will store information allowing for a fully function pairing.

Awards Won: