

SAN JUAN NM REGIONAL SCIENCE & ENGINEERING FAIR

JUNIOR AND SENIOR DIVISION

ABSTRACT & CERTIFICATION

TITLE: Intrumented Covid-19 mask with temperture sensors and alarm LED

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Grade Levl: 9th

Type the Body of Your Abstract Here (250 Word Maximum)

Because of the devastating effect that the COVID-19 pandemic had on the Navajo Nation and across the world, I decided to prototype and instrumented a respiratory mask having six temperature sensors in order to detect the temperature of the person wearing it and the health condition. This was mainly inspired off of the condition of the Navajo Nation right now as in some areas and some places some are not able to get tested or know their own health condition due to distance or lack of health care. These six temperature sensors were employed in three pairs; two inhale temperature sensors, two exhale temperature sensors, and two skin temperature sensors. These temperatures were monitored by an Arduino UNO microprocessor used with the Arduino Uno program and displayed on the serial monitor of my laptop with the USB cable. If the wearer's skin temperature exceeded a preselected value, indicating a fever, a red alarm LED lit, indicating the need to seek medical attention or further inspection. The mask gives needed protection to the wearer as mandated by law to wear mask when outside. However, with this experiment, I was able to build and instrumented a respiratory mask with temperature sensors that can monitor and detect temperature changes and health of the wearer using an analog system and how I could look at it at different spans of time easily.

1. The student independently performed all procedures as outlined in this abstract Yes No
2. This project is a continuation. Yes No
3. This project is being presented at SJRSEF NMJAS Paper Competition

I hereby certify that the above statements are correct and the information provided in the Abstract is the result of one year's research. I also attest that the above properly reflects my own work.

Lilliona Benally

Student's Signature

2/19/21

Date

