Non-Invasive Method To Efficiently Detect Bronchial Carcinoma, Chronic Obstructive Pulmonary Disease, and Emphysema Without Deleterious Effects on the Chest's Cavity

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My research this year was devoted to creating a non-invasive method to efficiently detect Bronchial Carcinoma, Chronic Obstructive Pulmonary Disease, and Emphysema unaccompanied by deleterious effects on the chest cavity since lung cancer is one of the leading causes of death in the world. My hypothesis states that this device would work and be more effective due to its ability to detect VOCs using Tetracosane and carbon. My hypothesis was supported in my experiment. In my method, I used circuit boards and melted tetracosane on top, placed carbon on top of the circuit board, and placed it back in the oven for thirty seconds. Then, various people breathed on the device and it detected where they were on the scale. Some data that was shown in the project was that the higher the number rose the more severe the condition of the person was. A person with healthy lungs would present with a resistance change of 0-2 in baseline resistance. In conclusion, I was able to improve upon this device as well as contribute to the discovery of various lung diseases from just a person's breath. I believe that this project can be improved, advanced, and help millions of people who suffer from lung conditions around the world.

Awards Won: