Pulse Oximeter measures the blood oxygen saturation and pulse rate using a clip. The clip consists of two light-emitting diodes (LEDs) that emit light at two different wavelengths: one in the red spectrum and the other in the infrared spectrum. These lights pass through the tissue and are detected by a photodiode on the other side of the clip. The use of the clip helps take measurements from the earlobe. This is a compact and portable oximeter that is battery-powered and outputs the results to a phone application. This makes this device portable and user-friendly for medical professionals and also individuals that want to monitor their cardiac health.

**Oxy vs. Deoxy Hemoglobin**

An oximeter is a non-invasive medical device used to measure the oxygen saturation level (SpO2) in a person's blood. By placing the device on a patient's fingertip or earlobe, it utilizes light absorption techniques to determine the percentage of oxygen-carrying hemoglobin in the blood. This information assists healthcare professionals in monitoring respiratory and cardiovascular health, identifying potential issues, and managing ongoing treatments.

**Why Is It Needed?**

- 1. Oximeter is idle, awaiting "start" signal
- 2. Oximeter determines the best gain option on TIA by changing the resistance on PGA to avoid signal saturation
- 3. Oximeter samples signal for a set period of time to collect data.
- 4. Oximeter uses collected data to determine O2 percentage in blood.

**Meet the Team**

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**Sponsors**

A Gift from Andrew Y.J. Szeto, Ph.D.