Liver Allograft Viability Sensor

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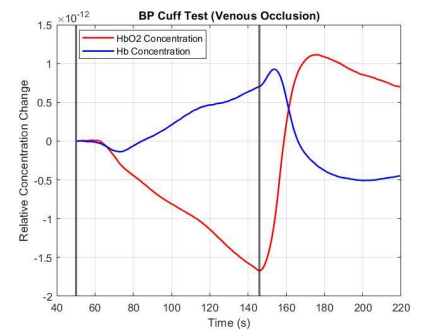
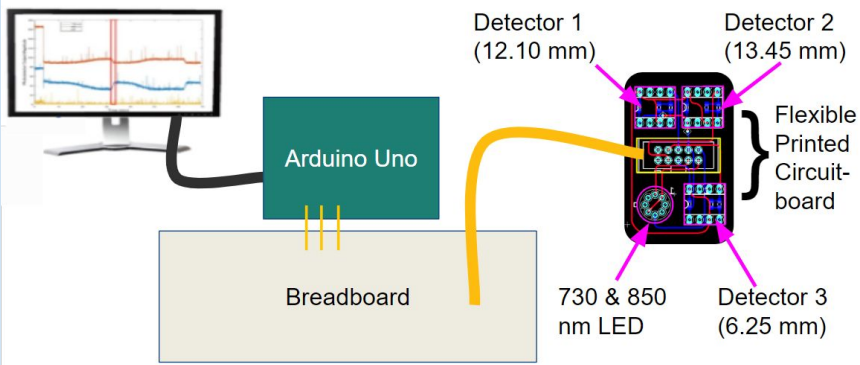
Problem: Each year 9.5k livers are donated and only 7.5k are transplanted; a discard rate of 10%, leaving 42% people on the waitlist

Need: Normothermic Machine Perfusion increases marginal tissue health through active metabolism; **no quantitative metric** to determine use

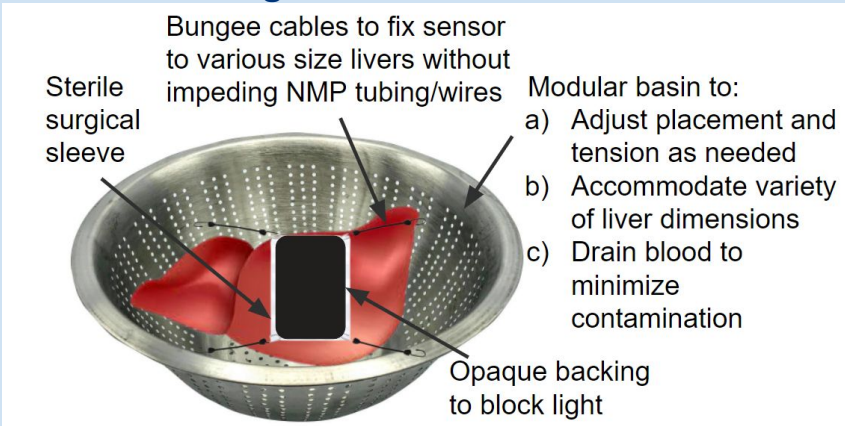
Testing Results: Venous Occlusion test showing a predicted decrease in Hbo2 and increase in Hb; vertical lines indicate occlusion begin and end



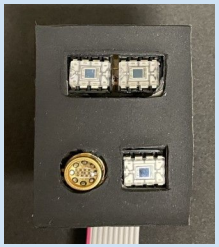
Solution-Design: Electronics



Solution-Design: Fixation



Prototype:



Objective: Provide **quantitative metric** for determination of liver allograft tissue **viability** during Normothermic Machine Perfusion.

Societal Impact: Provide a POC to **increase use of other marginal organs** while **reducing cost** of failed transplantation. Overall, this design will **decrease the percentage of discarded livers.**