Student Explanation of One Health Challenge Scoring Rubric

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<td><strong>Engineering Design Process</strong></td>
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| EDP                 | Selected, identified, and explained an engineering design process on their poster  
- Choose a form of the engineering design process that your team feels comfortable using  
- Use and document this engineering design process throughout the design of your product  
- Put this documentation on your poster  
- Keep an engineering journal                                                                 |
| Poster              | Evidence of following an engineering design process  
- On your poster document the steps your team uses to create your prototype  
- There is not a specific template that your poster needs to follow, but your poster needs to be on a PowerPoint slide that formatted to 36” x 48”  
- You will submit the PowerPoint slide online (link on website) and the ASSIST Center will print it for you and have it ready to display at the competition |
| **Prototype Design** |                                                                                                                                                                                                            |
| Aesthetics and Wearability | The design considers comfort, culturally sensitive designs, visually appeal, and durability  
- Your wearable device is comfortable for the user to wear. We understand that these are prototypes, but you still want the user to be comfortable with the device on (for example a device that the user wears that makes it difficult to bend their arm or limits their range of movement would not be an appropriate place to house your design)  
- Your design considers the population you are design for and takes cultural sensitivity into account (for example specific colors or patterns in certain cultures are considered taboo and should not be used, or consideration must be made to design a device that will not stigmatize the user)  
- The design is durable (the device does not fall apart, fall off, etc. as the user moves about; it is strongly advised that you test your device with different movements and in |

The **THREE** components that you will present at the competition are:

1. A poster on the engineering design process your team used to create your wearable device
2. A wearable device working prototype (high school) or model (middle school)
3. An ad campaign for your device
| **Sensor selection and placement** | The sensors are appropriately selected and placed for the intended use of the device  
- Consider the data you are collecting to determine the sensor placement (for example if you are designing a device for a dog to wear that is measuring the dog's temperature, you would not want to place the device on an area where there is lots of fur on the dog) |
| **Functionality (High School Only)** | The device functions as intended  
- Your device collects the data that it was intended to collect and the output signals work as intended (for example if you are collecting temperature and when a person's temperature exceeds a particular threshold a light and buzzer will go off signally that their temperature is too high) |
| **Feasibility** | Device works in selected environment and appropriately transmits data for intended target population  
- Consider your target population, for example if you are designing a device an elderly person would wear, can they work the device, does the output make sense to them, would it collect the appropriate data, etc. |
| **Sustainability/Power** | Explanation of future iterations of design uses self-powered energy harvesting (current design does not need to be self-powered)  
- One of the primary goals of the ASSIST Center is to create wearable devices that are self-powered. This means that the devices do not need to be powered by batteries for them to work. The three primary forms of energy that the ASSIST Center is currently focusing on collecting are thermal, piezoelectric, and solar.  
- Teams should research energy harvesting and determine a way that in the future their device can be self-powered  
- Teams need to consider the design of their device and which form of energy harvesting would make the most sense for the device based on placement of the device and the environment the device will be used in |
| **Middle School Bonus** | +2 - Device functions properly as intended  
- Middle school students ARE NOT required to create a functioning device, if you choose to do so, it will be counted for bonus points. You will receive two bonus points if the device functions as intended (see functionality)  
+1 - Device works some of the time as intended  
- You will receive one bonus point if the device works part of the time, but does not consistently transmit or read the data |
| **Advertising Campaign** | The advertising campaign provides information on why the device is needed and who will benefit from its use  
- Imagine your team is trying to sell your device. Create an ad campaign (this can be a video, a website, a flyer, a rap, anything really) that would let people know why they |
| **What/How** | The advertising campaign explains how to use the device and what the device does  
- Your ad campaign needs to explain the basic ways the device works (how to put it on, where to wear it, what data it gives you, etc.) |
| **One Health** |  |
| **Explanation** | All group members can articulate the goals of the One Health Concept  
- Research One Health (information can be found on the website)  
- All group members need to understand and be able to articulate the concepts of the One Health Concept if asked by the judges |
| **Connection** | The device is a solution for a One Health topic  
- On the One Health website there is an umbrella of the broad topics that One Health covers. Your team’s device needs to be a solution for one of these topics. |
| **Presentation** |  |
| **Ad Campaign and Poster** | The poster and ad campaign are visually appealing, cohesive, and concise  
- Your team’s poster includes pictures, your ad campaign gets people’s attention, both are free of spelling and grammatical errors |
| **Verbal Communication** | All students in the group actively participate and any student can articulate any concept related to their project  
- Each team member can, if necessary, answer any and all questions pertaining to your team’s device, the One Health Concept, and the ad campaign |