SANES Preliminary Judging Guidelines

Judging is conducted using a 100-point scale with points assigned to creative ability, scientific thought or engineering goals (II a and b respectively), thoroughness, skill, and clarity. Following is a list of questions for each criteria that can assist you in interviewing the finalists and aid in your evaluation of the finalists' projects. This rubric is inspired from ISEF's Old Affiliated Fair Judging Guidelines rubric.

I. **Creative Ability (Individual - 30)**

1. Does the project show creative ability and originality in the questions asked?
2. Creative approach to solving the problem, the analysis of the data, the interpretation of the data?The use of equipment, the construction or design of new equipment?
3. Creative research should support an investigation and help answer a question in an original way. 4. A creative contribution promotes an efficient and reliable method for solving a problem. When evaluating projects, it is important to distinguish between gadgeteering and ingenuity.

II. **Scientific Thought/Engineering Goals (Individual - 30)**

a. **Scientific Thought**

1. Is the problem stated clearly and unambiguously?
2. Was the problem sufficiently limited to allow a plausible approach? Good scientists can identify important problems capable of solutions.
3. Was there a procedural plan for obtaining a solution?
4. Are the variables clearly recognized and defined?
5. If controls were necessary, did the student recognize their need and were they correctly used?
6. Is there adequate data to support the conclusions?
7. Does the student recognize the data's limitations?
8. Does the student understand the project's ties to related research?
9. Does the student have an idea of what further research is warranted?
10. Did the finalist cite scientific literature, or only popular literature (local newspapers, Reader's Digest).

b. **Engineering Goals**

1. Does the project have a clear objective?
2. Is the objective relevant to the potential user's needs?
3. Is the solution workable, acceptable to the potential user, economically feasible?
4. Could the solution be utilized successfully in design or construction of an end product? 5. Is the solution a significant improvement over previous alternatives?
6. Has the solution been tested for performance under the conditions of use?

III. **Thoroughness (Individual - 15)**

1. Was the purpose carried out to completion within the scope of the original intent?
2. How completely was the problem covered?
3. Are the conclusions based on a single experiment or replication?
4. How complete are the project notes?
5. Is the finalist aware of other approaches or theories?
6. How much time did the finalist spend on the project?
7. Is the finalist familiar with scientific literature in the studied field?

IV. **Skill (Individual - 15)**

1. Does the student have the required laboratory, computation, observational and design skills to obtain supporting data?
2. Where was the project performed? (home, school laboratory, university laboratory) Did the student receive assistance from parents, teachers, scientists, or engineers?
3. Was the project completed under adult supervision, or did the student work largely alone? 4. Where did the equipment come from? Was it built independently by the student? Was it obtained on loan? Was it part of a laboratory where the finalist worked?

V. **Clarity (Individual - 10)**

1. How clearly does the student discuss the project and explain the purpose, procedure, and conclusions? Watch out for memorized speeches that reflect little understanding of principles. 2. Does the written material reflect the student's understanding of the research?
3. Are the important phases of the project presented in an orderly manner?
4. How clearly is the data presented?
5. How clearly are the results presented?
6. How well does the project display explain the project?
7. Was the presentation done in a forthright manner, without tricks or gadgets?
8. Did the student perform all the project work, or did someone help?