# Intel ISEF Judging Guidelines

The following evaluation criteria will be used for judging at the Ritchey Science & Engineering Fair. This list was extensively reviewed and revised by the Intel ISEF Judge Advisory Committee, with additional input from science, engineering and educational experts. One of the most significant changes from the previous guidelines is the use of different criteria for science and engineering projects. As shown below, both criteria have five sections as well as suggested scoring for each section. Considerable emphasis is placed on two areas: *Creativity* and *Presentation* (especially the *Interview* section) and are discussed in more detail below.

**Creativity:** A creative project demonstrates imagination and inventiveness. Such projects often offer different perspectives that open up new possibilities or new alternatives. Judges should place emphasis on research outcomes in evaluating creativity.

**Presentation/Interview:** The interview provides the opportunity to interact with the students and evaluate their understanding of the project's basic science, interpretation and limitations of the results and conclusions.

- If the project was done at a research or industrial facility; the judge should determine the degree of independence of the student in conducting the project.
- If the project was completed at home or in a school laboratory; the judge should determine if the student received any mentoring or professional guidance.
- If the project is a multi-year effort; the interview should focus ONLY on the current year's work.
- **Please note that all members of a team** should demonstrate significant contributions to and an understanding of the project.

## Judging Criteria for Science Projects

### 1. Research Question (10 pts)

___ clear and focused purpose
___ identifies contribution to field of study
___ testable using scientific methods

### 2. Design and Methodology (15 pts)

___ well-designed plan and data collection methods
___ variables and controls defined, appropriate and complete

### 3 Execution: Data Collection, Analysis and Interpretation (20 pts)

___ systematic data collection and analysis
___ reproducibility of results
___ appropriate application of mathematical and statistical methods
___ sufficient data collected to support interpretation and conclusions

### 4. Creativity (20 pts)

___ project demonstrates significant creativity in one or more of the above criteria

**5. Presentation (35 pts)**

a. Poster (10 pts)
___ logical organization of material
___ clarity of graphics and legends
___ supporting documentation displayed

b. Interview (25 pts)
___ clear, concise, thoughtful responses to questions
___ understanding of basic science relevant to project
___ understanding interpretation and limitations of results and conclusions
___ degree of independence in conducting project
___ recognition of potential impact in science, society and/or economics
___ quality of ideas for further research
**___ for team projects, contributions to and understanding of project by all members**

## Judging Criteria for Engineering Projects

**1. Research Problem (10 pts)**

___ description of a practical need or problem to be solved
___ definition of criteria for proposed solution
___ explanation of constraints

**2. Design and Methodology (15 pts)**

___ exploration of alternatives to answer need or problem
___ identification of a solution
___ development of a prototype/model

**3. Execution: Construction and Testing (20 pts)**

___ prototype demonstrates intended design
___ prototype has been tested in multiple conditions/trials
___ prototype demonstrates engineering skill and completeness

**4. Creativity (20 pts)**

___ project demonstrates significant creativity in one or more of the above criteria

**5. Presentation (35 pts)**

a. Poster (10 pts)
___ logical organization of material
___ clarity of graphics and legends
___ supporting documentation displayed

b. Interview (25 pts)
___ clear, concise, thoughtful responses to questions
___ understanding of basic science relevant to project
___ understanding interpretation and limitations of results and conclusions
___ degree of independence in conducting project
___ recognition of potential impact in science, society and/or economics
___ quality of ideas for further research
**___ for team projects, contributions to and understanding of project by all members**