

## **ABSTRACT FORM**

- IN ORDER for the SSTFI to remain AFFILIATED with the Intel ISEF **ALL STUDENTS regardless of age** must complete an abstract.
- The abstract should be completed after finishing research and experimentation.
- Students may use either the INTEL ISEF Abstract Form or the **SSTFI Abstract Form** (Please NOTE: projects do not have to use the actual form for display or submission purposes; HOWEVER, all information the Abstract Form requests including name & project title MUST be on the paper).
- The abstract should only be a MAXIMUM of 250 words and written/typed on only ONE-PAGE.
- An abstract should include the following information:
  - Purpose of the experiment
  - Procedures used
  - Data collected
  - Conclusions
- The abstract needs to be displayed vertically on the project (not necessarily on the backdrop but somewhere in the project display area).

### **What if my research is not completed at the time of entry submission?**

- Entries sent in prior to completion of experimentation please still send in the Abstract Form and have written as much as is available at the time with the disclaimer that research was not completed at time of entry submission.
- The SRC will mark your project as in violation for competition and will look for completed abstracts during SSTFI set-up. It is to your advantage to have the abstract sent it at the time of SRC paperwork submission!
- IMPORTANT NOTE: We do compile an abstract book to be utilized in the judging rooms and award workroom in case of questions or clarifications so this is a very IMPORTANT component to your project and should be well written and complete.
  - The abstracts typed into the on-line registration systems are the ones utilized for these workbooks. No changes may be submitted to the books after the permanent close of on-line student registration. (Generally the Saturday prior to the fair).

### **How do I format my abstract?**

- For the most accurate abstract examples students should utilize journals or other resources with published research papers within their area of study. These are the best sources to see how researchers in the field format and write an abstract. (It is also the best place to see what method of citation is used for bibliographies.)

## **ABSTRACT EXAMPLES**

### **Writing an Abstract – Examples**

Each student who completes a science fair project must write an abstract to be displayed with the project. An abstract gives the essence of the project in a brief but complete form — it should not exceed 250 words. Judges and the public should have a fairly accurate idea of the project after reading the abstract.

The abstract must focus on the current year's research and give only minimal reference to previous work. Details and discussions should not be included in the abstract, but may be put in the longer, written research paper, or given on the project exhibit board.

Note that an abstract does not include acknowledgements (such as referencing mentor or university laboratory) or a bibliography (this should be included in the Form 1A Research Plan Attachment).

The following colors in the two abstract examples demonstrate the following concepts:

#### **Purpose of the Experiment (Blue)**

- An introductory statement of the reason for investigating the topic of the project.
- A statement of the problem or hypothesis being studied.

#### **Procedures Used (Green)**

- A summarization of the key points and an overview of how the investigation was conducted.
- An abstract does not give details about the materials used unless it greatly influenced the procedure or had to be developed to do the investigation.
- An abstract should only include procedures done by the student. Work done by a mentor (such as surgical procedures) or work done prior to student involvement must not be included.

#### **Observation/Data/Results (Red)**

- This section should provide key results that lead directly to the conclusions you have drawn.
- It should not give too many details about the results nor include tables or graphs.

#### **Conclusions (Pink)**

- Conclusions from the investigation should be described briefly.
- The summary paragraph should reflect on the process and possibly state some applications and extensions of the investigation.

## SENIOR HIGH LEVEL SAMPLE ABSTRACT

### **Sample Abstract** **Effects of Marine Exhaust Water on Algae**

Jones, Sally C.  
123 Main St., Hometown, IA 50001  
Hometown High School, Hometown, IA

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This project in its present form is the result of bioassay experimentation on the effects of two-cycle marine engine exhaust water on certain green algae. The initial idea was to determine the toxicity of outboard engine lubricant. Some success with lubricants eventually led to the formulation of "synthetic" exhaust water which, in turn, led to the use of actual two-cycle engine exhaust water as the test substance.

Toxicity was determined by means of the standard bottle or "batch" bioassay technique. *Scenedesmus quadricauda* and *Ankistrodesmus* sp. Were used as the test organisms. Toxicity was measured in terms of a decrease in the maximum standing crop. The effective concentration – 50 % (EC 50) for *Scenedesmus quadricauda* was found to be 3.75% exhaust water, for *Ankistrodesmus* sp. 3.1% exhaust water using the bottle technique.

Anomalies in growth curves raised the suspicion that evaporation was affecting the results; therefore, a flow-through system was improvised utilizing the characteristics of a device called a Biomonitor. Use of the Biomonitor lessened the influence of evaporation, and the EC 50 was found to be 1.4% exhaust water using *Ankistrodesmus* sp. as the test organism. Mixed populations of various algae gave an EC 50 of 1.28% exhaust water.

The contributions of this project are twofold. First, the toxicity of two-cycle marine engine exhaust was found to be considerably greater than reported in the literature (1.4% vs 4.2%). Secondly, the benefits of a flow-through bioassay technique utilizing the Biomonitor was demonstrated.

## JUNIOR HIGH LEVEL SAMPLE ABSTRACT

### **Sample Abstract** **Do Vitamin A Tablets Affect Plants**

Jones, Mary E.  
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Hometown Middle School, Hometown, IA

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The purpose of this project was to determine if Vitamin A tablet have any effect on tomato plants. A total of twelve Rutgers tomato plants each two inches tall were planted in identical individual plastic pots using two cups of potting soil. Each plant received the same amount of water and sunlight during the three week experiment. The twelve plants were divided into four groups of three plants each. One vitamin A tablet was added to each of the three plants in the first group by burying the tablet one inch from the stem and one inch deep. Two vitamin A tablets were added to the second group of three plants in a similar manner. The third group of three plants had three tablets planted in the soil. The fourth group of three plants had no vitamin A tablets added to the soil and served as the control group. The height of each plant was measured and recorded at the start of the experiment and every 7 days thereafter. At the end of the experiment (21 days) the stems were cut across at a height of 3 inches. Experimental groups showed less development and slower growth rates than plants in the control group. The data was analyzed and the conclusion was drawn that giving vitamin A tablets to tomato plants did not improve growth as each of the three experimental groups failed to produce plants that were taller or had thicker stems than those in the control group.

# STATE SCIENCE & TECHNOLOGY FAIR OF IOWA

## ABSTRACT FORM

An ABSTRACT is *required for EACH PROJECT* and MUST accompany SRC Forms!

Abstracts **MUST be Vertically Displayed** on the project at the SSTFI!

- Please present below an ABSTRACT of your finished research and experimentation.
- **The abstract should consist of a maximum of 250 words.**
- An abstract is a **SUMMARY** and should include:
  - purpose of the experiment
  - procedures
  - data
  - results
  - conclusions
  - may include possible research applications.

**NOTE: You are not required to use this form but all the information listed above must be followed!**

Project Title: \_\_\_\_\_

Student(s) Name(s): \_\_\_\_\_