Student information about science fair.

The science fair is on Tuesday, December 1st from 1st-4th periods in the small gym.
You will set up your project immediately upon arrival at school at your designated spot
(project numbers will be located on the floor, set up on top of your number).
You will need to bring your own table to set up on.
You will be issued a pass with your project number and judging time.
The pass will be handed to you by your science teacher the day before the fair.
Please leave your class 5 minutes early so you will be on time to be judged.
When you are done being judged you will return to class and listen for an announcement
which tells you when the fair is over.
When the fair is over, you will take your project and table to your science classroom.

Attached is the application for the school fair, please fill it out completely and turn it into
your science teacher or to Ms. Deters in room 707

Attached is also a description of the categories, choose one that is closest to your project.

Attached is a blank abstract that is required for each project.

Attached is the judges grade sheet that will be used to judge all projects.

Applications are due no later than Friday, November 20th. (NO EXCEPTIONS)

Application for entry of scientific exhibit in the Musselman High School's Science Fair

One application per entry (PLEASE PRINT OR TYPE)

December 1, 2015 (Snow date 12/3/15)

Student Name (first & last) _____science teacher: _____AM Rumsey: Yes/no

Student Name (first & last) _____science teacher: _____AM Rumsey: yes/no

Student Name (first & last) _____science teacher: _____AM Rumsey: yes/no

Title of Project _____

Categories: Pick one category that your project falls under (1-15)

___	1	Animal Sciences	___	10	Energy
___	2	Behavioral & Social Science	___	11	Engineering
___	3	Biochemistry	___	12	Material Science
___	4	Biomedical & Health Sciences	___	13	Mathematical Science
___	5	Cell & Molecular Biology	___	14	Microbiology
___	6	Chemistry	___	15	Physics & Astronomy
___	7	Computational Biology & Bioinformatics	___	16	Plant Science
___	8	Earth Science & Environmental Sciences	___	17	Robotics & Intelligent Machines
___	9	Embedded Systems	___	18	Systems Software
Note: Teams will be integrated into 1-18					

Does your project use photographs?   _____ Yes   or   _____ No

> Note: no photographs of animals in other than normal conditions; no dissection photographs nor laboratory techniques on the animal can be shown; no faces of individuals (regional rule)

Does your project/display require electricity?   _____ Yes   or   _____ No

> Note: you must *provide your own* grounded extension cord (minimum of 9 feet)

*****All display and safety rules and regulations will be enforced; any violations will result in disqualification. Questions ask your science teacher or consult your science fair booklet.

***** This application is due to Ms. Deters (rm 707) by **November 20, 2015.** No late applications will be accepted. No late/last minute entries will be accepted. NO EXCEPTIONS!!!

*******Tables will not be provided.   You must provide your own.**

Musselman High School Science Fair Project Judging Form   Project # _____

Project Title: _____   Category: _____

Evaluation Criteria	0	1	2	3	4	5	Points

Content of project (25 points)

	0	1	2	3	4	5	Points
Is there a well-written abstract?	o	o	o	o	o	o	_____
Are the materials and equipment listed?	o	o	o	o	o	o	_____
Was the procedure listed in concise terms?	o	o	o	o	o	o	_____
Actual/Potential errors are discussed?	o	o	o	o	o	o	_____
Is there an apparent result or conclusion?	o	o	o	o	o	o	_____
						Total	_____

Scientific Study (25 points)

	0	1	2	3	4	5	Points
Is the problem thoroughly tested?	o	o	o	o	o	o	_____
Is it a testable hypothesis?	o	o	o	o	o	o	_____
Are the variables stated?	o	o	o	o	o	o	_____
Follow the scientific method?	o	o	o	o	o	o	_____
Are the conclusions accurate?	o	o	o	o	o	o	_____
						Total	_____

Interview Analysis (20 points)

	0	1	2	3	4	5	Points
Does the student or students know the topic?	o	o	o	o	o	o	_____
Did the student or students present the topic well? If team, did all speak?	o	o	o	o	o	o	_____
Does the oral presentation show organization and planning?	o	o	o	o	o	o	_____
Can the student or students answer questions on their topic?	o	o	o	o	o	o	_____
						Total	_____

Experimentation (20 points)

	0	1	2	3	4	5	Points
Was there quantitative/qualitative data gathered?	o	o	o	o	o	o	_____
Was there controlled experimentation?	o	o	o	o	o	o	_____
Did the experiment truly test the hypothesis?	o	o	o	o	o	o	_____
Was the data collected correctly?	o	o	o	o	o	o	_____
						Total	_____

Overall project analysis (10 points)

	0	1	2	3	4	5	Points
Is the display visually appealing?	o	o	o	o	o	o	_____
Was the project well planned and researched?	o	o	o	o	o	o	_____
						Total	_____

Total number of points (Out of 100 possible)   Grand Total _____

* Highest score for category out of 100 pts = 1st place
Second highest score for category out of 100 pts = 2nd place
Third highest score for category out of 100 pts = 3rd place
Fourth highest score for category out of 100 pts = Honorable Mention

Intel ISEF Categories and Subcategories

The categories have been established with the goal of better aligning judges and student projects for the judging at the Intel ISEF. Local, regional, state and country fairs may or may not choose to use these categories, dependent on the needs of their area. Please check with your affiliated fair(s) for the appropriate category listings at that level of competition.

Please visit our website at **student.societyforscience.org/intel-isef-categories-and-subcategories** for a full description and definition of the Intel ISEF categories:

ANIMAL SCIENCES
Animal Behavior
Cellular Studies
Development
Ecology
Genetics
Nutrition & Growth
Physiology
Systematics & Evolution
Other

BEHAVIORAL & SOCIAL SCIENCES
Clinical & Developmental Psychology
Cognitive Psychology
Physiological Psychology
Sociology & Social Psychology
Other

BIOCHEMISTRY
Analytical Biochemistry
General Biochemistry
Medicinal Biochemistry
Structural Biochemistry
Other

BIOMEDICAL & HEALTH SCIENCES
Disease Diagnosis
Disease Treatment
Drug Development & Testing
Epidemiology
Nutrition
Physiology & Pathology
Other

CELLULAR & MOLECULAR BIOLOGY
Cell Physiology
Genetics
Immunology
Molecular Biology
Neurobiology
Other

CHEMISTRY
Analytical Chemistry
Computational Chemistry
Environmental Chemistry
Inorganic Chemistry
Materials Chemistry
Organic Chemistry

Physical Chemistry
Other

COMPUTATIONAL BIOLOGY & BIOINFORMATICS
Biomedical Engineering
Computational Pharmacology
Computational Biomodeling
Computational Evolutionary Biology
Computational Neuroscience
Genomics
Other

EARTH & ENVIRONMENTAL SCIENCES
Atmospheric Science
Climate Science
Environmental Effects on Ecosystems
Geosciences
Water Science
Other

EMBEDDED SYSTEMS
Circuits
Internet of Things
Microcontrollers
Networking & Data Communications
Optics
Sensors
Signal Processing
Other

ENERGY: CHEMICAL
Alternative Fuels
Computational Energy Science
Fossil Fuel Energy
Fuel Cells & Battery Development
Microbial Fuel Cells
Solar Materials
Other

ENERGY: PHYSICAL
Hydro Power
Nuclear Power
Solar
Sustainable Design
Thermal Power
Wind
Other

ENGINEERING MECHANICS
Aerospace & Aeronautical Engineering
Civil Engineering
Computational Mechanics
Control Theory
Ground Vehicle Systems
Industrial Engineering-Processing
Mechanical Engineering
Naval Systems
Other

ENVIRONMENTAL ENGINEERING
Bioremediation
Land Reclamation
Pollution Control
Recycling & Waste Management
Water Resources Management
Other

MATERIALS SCIENCE
Biomaterials
Ceramic & Glasses
Composite Materials
Computation & Theory
Electronic, Optical & Magnetic Materials
Nanomaterials
Polymers
Other

MATHEMATICS
Algebra
Analysis
Combinatorics, Graph Theory, & Game Theory
Geometry & Topology
Number Theory
Probability & Statistics
Other

MICROBIOLOGY
Antimicrobials & Antibiotics
Applied Microbiology
Bacteriology
Environmental Microbiology
Microbial Genetics
Virology
Other

PHYSICS & ASTRONOMY
Astronomy & Cosmology
Atomic, Molecular, & Optical Physics
Biological Physics
Computational Physics & Astrophysics
Condensed Matter & Materials
Instrumentation
Magnetics, Electromagnetics & Plasmas
Mechanics
Nuclear & Particle Physics
Optics, Lasers, Masers
Quantum Computation
Theoretical Physics
Other

PLANT SCIENCES
Agronomy
Ecology
Genetics/Breeding
Growth & Development
Pathology
Physiology
Systematics & Evolution
Other

ROBOTICS & INTELLIGENT MACHINES
Biomechanics
Cognitive Systems
Control Theory
Machine Learning
Robot Kinematics
Other

SYSTEMS SOFTWARE
Algorithms
Cybersecurity
Databases
Operating Systems
Programming Languages
Other

OFFICIAL ABSTRACT and CERTIFICATION

Category
Pick one only—mark an "X" in box at right

Animal Sciences	☐
Behavioral and Social Science	☐
Biochemistry	☐
Biomedical and Health Sciences	☐
Cellular and Molecular Biology	☐
Chemistry	☐
Computational Biology and Bioinformatics	☐
Earth and Environmental Sciences	☐
Embedded Systems	☐
Energy: Chemical	☐
Energy: Physical	☐
Engineering Mechanics	☐
Environmental Engineering	☐
Materials Science	☐
Mathematics	☐
Microbiology	☐
Physics and Astronomy	☐
Plant Sciences	☐
Robotics and Intelligent Machines	☐
Systems Software	☐

1. As a part of this research project, the student directly handled, manipulated, or interacted with (check ALL that apply):

   ☐ human participants   ☐ potentially hazardous biological agents

   ☐ vertebrate animals   ☐ microorganisms   ☐ rDNA   ☐ tissue

2. I/we worked or used equipment in a regulated research institution or industrial setting: ☐ Yes   ☐ No

3. This project is a continuation of previous research.   ☐ Yes   ☐ No

4. My display board includes non-published photographs/visual depictions of humans (other than myself):   ☐ Yes   ☐ No

5. This abstract describes only procedures performed by me/us, reflects my/our own independent research, and represents one year's work only   Yes   No

6. I/we hereby certify that the abstract and responses to the above statements are correct and properly reflect my/our own work.   ☐ Yes   ☐ No
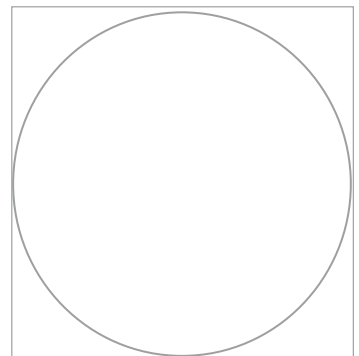
This stamp or embossed seal attests that this project is in compliance with all federal and state laws and regulations and that all appropriate reviews and approvals have been obtained including the final clearance by the Scientific Review Committee.

COMPLETING THE ABSTRACT:

Abstracts are limited to a maximum 250 words and must fit within the predefined area. Please be sure to consult the information from your affiliate fair for the proper formatting of the header information as fairs differ in what is required (or not allowed).

The abstract **should include the following:**

a) *purpose of the experiment*
b) *procedure*
c) *data*
d) *conclusions*

It may also include any possible research applications. Only minimal reference to previous work may be included. An abstract **must not include the following**:

a) *acknowledgments (including naming the research institution and/or mentor with which you were working), or self-promotions and external endorsements*
b) *work or procedures done by the mentor*

COMPLETING THE CERTIFICATION:

At the bottom of the Abstract & Certification form there are six questions. Read each carefully and answer appropriately. The Affiliated Fair Scientific Research Committee will review and approve the abstract and answers to the questions.

Please bring a copy of your Abstract & Certification to the fair and be sure to consult with your affiliated fair regarding the rules of making copies to distribute.

TIPS ON WRITING A PROJECT ABSTRACT

A project abstract is a brief paragraph or two (limited to 250 words or 1,800 characters) highlighting and/or summarizing the major points or most important ideas about your project. An abstract allows judges to quickly determine the nature and scope of a project.

- Emphasize these aspects: purpose (hypothesis), methods (procedures used), data summary or analysis, and conclusions.

- Focus only on the current year's research.

- Omit details and discussions.

- Use the past tense when describing what was done. However, where appropriate use active verbs rather than passive verbs.

- Use short sentences, but vary sentence structure.

- Use complete sentences. Don't abbreviate by omitting articles or other small words in order to save space.

- Avoid jargon and use appropriate scientific language.

- Use concise syntax, correct spelling, grammar, and punctuation.

AVOID A REWRITE

- Focus on what you did, not on the work of your mentor or of the laboratory in which you did your work.

- Do NOT include acknowledgements, self promotion or external endorsements. Don't name the research institution and/or mentor with which you were working and avoid mentioning awards or honors (including achieving a patent) in the body of the abstract.

- Be sure to emphasize the current year's research. A continuation project should only make a brief mention of previous years' research (no more than a sentence or two).