Revised 9/4/14

Missouri Tri- County Regional Science and Engineering Fair

Rules and Forms
2014-2015

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Regional Science Fair Steering Committee:

Director: Donna Malkmus from Francis Howell North High School

email address donna.malkmus@fhsdschools.org

Committee Members:

Jennifer Berendzen from Wentzville Holt High School

Dr. Mara Vorachek-Warren from Saint Charles County Community College

Registration Information:

Registration will be done online. Teachers that have students that win at their school should register the student. Teachers should contact Donna Malkmus at

donna.malkmus@fhsdschools.org

to get the online link to register their student. The online registration will be open from Jan 26 thru Feb 9, 2015.

Dates for the fair: provided we get funding

Feb 21, 2015- drop off project at the College center Building 7am until 9am on the campus of SCC in the College Center Building.

Judging will be held from 9am until 1pm. We will awards 1st through 3rd place in each category in each grade. High school is considered just one grade.
Award ceremony: Feb 21, 2015 in the auditorium of the Social Science Building at 6pm.

Eligibility

Schools in the counties of St. Charles, Lincoln and Warren

All students should participate in a local (school) qualifying fair prior to attending the MTRSEF regional fair. If you school does not hold a school fair, then contact Donna Malkmus at donna.malkmus@fhsdschools.org. Students that are home schooled are also eligible to participate as long as they live within St. Charles, Lincoln, or Warren counties.

1. Any student in grades K-8 is invited to have their project judged at the Missouri Tri-County Regional Science and Engineering Fair (MTRSEF) in one of four

categories: Biology, Physical Science, Earth/Environmental or Applied Consumer Science. Students will be judged on creativity and scientific thought**. Students in grades K-8th Grade will not be allowed to do vertebrate projects of any kind.**

As MTRSEF serves as a feeder affiliate for ISEF, we abide by ISEF's rules regarding use of vertebrates for research in 9-12 projects. There are a multitude of forms that must be approved and multiple layers of screening involved before a research project in grades 9-12 involving vertebrates (including humans) can even begin. This level of scrutiny is to protect the animals/subjects being used, the student doing the research, and indeed the school that is signing off on the research. There are acceptable standards for research involving vertebrates/humans that must be adhered to, and careful pre-approval ensures that these standards are met. To view ISEF's vertebrate and human subject rules, please follow this link: https://member.societyforscience.org/document.doc?id=398.

Due to the intense level of pre-approval required, students in grades K-8 are <u>prohibited</u> from performing research involving any vertebrates, including humans. This includes:

* Taking a person's fingerprints

* Conducting surveys

* Sports activities/exercise

* Video gaming

* Medical procedures

* Culturing bacteria from human/animal subjects

* Pets (including aquarium fish)

According to ISEF's 2015 rules, the only human projects that are exempt from pre-approval must fit the following criteria:

Exempt Studies (Do Not Require IRB Preapproval or Human Participants Paperwork)

Some studies involving humans are exempt from IRB pre- approval or additional human participant forms. Exempt projects for the Intel ISEF and affiliated fairs are:

- Testing of a student-designed invention, program, concept, etc. is done only by the student researcher and where the testing does not pose a health or safety hazard. It is required that a Risk Assessment Form (3) be completed.
- Data/record review studies (e.g., baseball statistics, crime statistics) in which the data are taken from preexisting data sets that are publicly available and/or published and do not involve any interaction with humans or the collection of any data from a human participant for the purpose of the student's research project.
- Behavioral observations of unrestricted, public settings (e.g., shopping mall, public park) in which all of the following apply:

  a. the researcher has no interaction with the individuals being observed

  b. the researcher does not manipulate the environment in any way

  c. the researcher does not record any personally identifiable data.

Any questions as to whether a project could potentially violate this rule should be addressed to either donna.malkmus@fhsdschools.org OR jennifermallery@wentzville.k12.mo.us. Projects that progress to regional fair and are found to be in violation of this rule will be disqualified at the regional level regardless of lower fair results. It is the responsibility of each school's fair coordinator or the classroom teachers to be familiar with this rule and to inquire about projects they may have questions about prior to competition.

2. Any student in grades 9-12 is invited to have their project judged in one of four categories: Biology, Physical Science, Chemistry, and Mathematics/Computer Science. Students will be judged on creativity and scientific thought.
3. Any student in grades 9-12 Honors Division is eligible to be judged for special awards if they remain with their project for an interview by the judges. **All students in this category must submit to the SRC at the Community College an abstract of their research.** All students who wish to qualify for the Intel International Science and Engineering Fair must have protocol forms approved by the Scientific Review Committee (SRC) **prior to experimentation** or prior to the fair if work was conducted in an approved institutional setting.

4. **ALL Honors Division projects must have the Risk Assessment Form filled out and submitted to the SRCchair (Dr. Mara Vorachek-Warren) prior to beginning experimentation. Protocol forms must be sent to the SRC chair by Dec 5,2014. SRC chair is Dr. Mara Vorachek-Warren who works at SCCC 4601 Mid Rivers Mall Drive Cottleville, Mo. 63376.** Rules and regulations for the Honors Division can be found at http://www.societyforscience.org/isef/

Partner Projects Grades K-8

Partner projects consist of a maximum of two people**.** Partner projects that have two students from different grades will be placed in the higher grade of the partnership.

High School Team Projects-Honors Division

Team projects may be completed by students of any age that are in high school. Teams may consist of two or three members.

Awards

K-8 First through third place awards will be given in each grade level per category. (Applied Consumer Science, Biology, Physical Science, Earth and Environmental are the K-8 categories)

Partner/Team Projects Grade K-8 Projects will be awarded first through third place per grade and are not judged by a category.

Class projects Grades K-2nd grade

9-12 First through third place awards will be given in each category. (Bio, Chem, Physics/Engineering, Earth/Environment) depending on the number of entries.

High School Honors Division- All special awards will be determined by judge's interview. Example special awards are the Army Awards, and Intel International Science Fair Finalists. Honors Division will be judged as a division and not by category.

High School Team Projects will be judged with the Honors Division so those projects will need to fill out SRC paperwork found at http://www.societyforscience.org/isef/ . This paperwork will then be submit to Dr. Mara Vorachek-Warrren at SCC.

Display and Safety

Maximum Size of Project

K-4	60cm deep front to back 56 cm side to side 96 cm table top to project top
5-12	60cm deep front to back 56 cm side to side 96cm table top to project top

9-12- Intel International Science Fair potential finalists

30 inches (76 cm) deep front to back
48 inches (122 cm) side to side
108 inches (274 cm) floor to top- a table will not exceed 36 inches (91 cm)

Required to be displayed

- Approved SRC protocol forms(high school honors division only)
- Photograph credits
- Log book
- Problem/Hypothesis
- Method
- Data
- Conclusion
- Bibliography

Not Allowed at Project

- Living organisms including plants
- Taxidermy specimens or parts
- Preserved vertebrate or invertebrate animals
- Human or animal food
- Human/ animal parts or body fluids
- Plant materials: living, dead or preserved **EXCEPTION**: wood as a construction material in project or display
- All chemicals including water
- All weapons- including lasers
- Dry ice
- Sharp items (needles, nails, syringes, pipettes, knives)
- Flames or highly flammable items
- Batteries with open top cells
- Awards from other competitions
- School name or identification
- Photographs with faces or showing organisms in unnatural states (necropsy, dissection)
- Glass or glass objects
- Any other apparatus that is deemed unsafe by the Science Fair Directors.

There will be no electricity provided at the fair.

Judging Process

K-4 Students will receive a feedback sheet based on creativity and scientific thought.

5-12 Students will have their projects evaluated using the scoring guide in this handbook. Students in grades 5-12 **will not** get a feedback sheet because they are at a level in which they should already be able to apply the scientific method.

High school Honors division- students who are competing to win the honors to attend the Intel International Science Fair must be present for interviews from 9am until 12:30pm.

Photographs of method and data and charts and graphs are very valuable on the display!

Evaluation Sheet Grades K-4

Criteria	Has it	Working on it
Creative ability **unique topic or methodology**		
Scientific Thought **Follows and understands the scientific method.**		
Thoroughness **Detail and accuracy of research as documented in the log book.**		
Skill **Experimental procedures were used in the best possible way.**		
Clarity **Project is easy to follow and student appears to understand the project.**		

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Scoring Guide for grades K-8th

Points Awarded	Possible points	Category	Descriptors
	5	Title	Contains independent and dependent variables Clear and correct
	5	rationale	Reason for doing project/ what you hope to learn
	5	Hypothesis	Clear and correct/If then statement preferred
	10	variables	Independent variable listed and labeled correctly IV levels are indicated (time=every 30s for 5min) Dependent variable listed and labeled Constants described (3 preferred)_
	15	Procedure	Logical procedure for hypothesis Possible to follow (no ambiguity) Multiple trials- 3 minimum
	15	Data Table	Title includes IV and DV IV and DV labeled with units Trials are labeled Mathematical computations are accurate Logically arranged/easy to understand Neat
	15	Graph	Title included IV and DV Label for X axis is IV with units Label for Y axis is DV with units Appropriate type of graph Reasonable scale Size large enough to read Accurate Neat
	15	Log book	All parts of the experiment including detail information on materials and procedure, data , data tables and results
	20	Conclusion	Restates purpose or hypothesis Includes major findings Supports or rejects hypothesis Possible explanation of data Ideas for further improvements/Further study Clear and accurate
	5	Reference/Bibliography	Present and appropriate
	5	Overall	Neat, typed or in ink, third person, few grammar or spelling errors

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