Southeast Missouri Regional Science Fair will be held on Tuesday, March 10th, 2015 at the SHOW ME CENTER on the campus of Southeast Missouri State University Cape Girardeau, MO
Dear Southeast Missouri Science and Mathematics Teachers:

As the new school year gets underway, it is time to begin preparing for the Science Fair. The 59th Annual Southeast Missouri Regional Science Fair will be held at the Show Me Center on the campus of Southeast Missouri State University on Tuesday, March 10th, 2015. The 66th Intel International Science and Engineering Fair (ISEF) will be held May 10-15, 2015 in Pittsburgh, PA.

As you begin preparing for the 59th Regional Science Fair, I strongly emphasize that you READ THE RULES FIRST. If you have questions after reading the rules, please call. The rules contain links to all the forms that will be needed. Although the rules are restrictive, the Regional Science Fair must abide with them in order to ensure our continued affiliation with the ISEF.

Let me remind you of a rule change in the Junior Division from recent years. In the past, we did not allow students in the Junior Division to use human subjects; however, there were always a large number of experiments that involved interaction with human subjects. These experiments were technically in violation of the rules although most of them were largely risk free. The Science Fair Committee has decided to allow experiments that involve interaction with human subjects if these experiments are pre-approved by an Institutional Review Board. This would require that Form 4 be signed prior to the beginning of experimentation. This may mean that schools with only Junior Division students will need to form an Institutional Review Board.

There are a few minor changes from previous year which are included on this website.

The fair will again be held on one day only – Tuesday, March 10th, 2015. An entry fee of $10.00 per exhibit (not student) will be charged; $15.00 per exhibit if electricity is required. This fee may be paid by the student, student’s family or school. After electronic submission of all entry forms, please print and sign forms next to printed names on the email confirmation. Mail a signed copy of entry form (and other forms where applicable) with registration fee so it is received by February 10th, 2015. Local fairs must be held far enough before this date to meet the deadline. (If paying by check, check should be written to SOUTHEAST MISSOURI REGIONAL SCIENCE FAIR.)

There are no restrictions on how many projects a school may send; the only request is that your school provides one person to judge for every ten entries you enter in the Junior category. This can be a high school teacher. These names must be submitted to Dr. David Probst, Department of Physics and Engineering Physics, Southeast Missouri State University, One University Plaza, Cape Girardeau, MO 63701 (or by fax: 573-651-2223) by Tuesday, February 10th, 2015.

All signatures must have a date that is BEFORE the experimentation starts.

We are anticipating another great year with the Science Fair. Student attendance is mandatory during the two hours of interview/judging on Tuesday afternoon - there are no exceptions. Attendance at the Awards Ceremony is mandatory for acceptance of any special awards unless prior arrangements have been made. No awards will be announced prior to the awards ceremony. The ceremony will last approximately 90 minutes.

See you in March.

Dr. Chris McGowan, Director
Southeast Missouri Regional Science Fair
regscifair@semo.edu
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2014 Southeast Missouri Regional Science Fair Sponsors

The College of Science, Technology and Agriculture
(on the Campus of Southeast Missouri State University)

The Cape Girardeau Southeast Missourian

Drury Southwest

2015 Southeast Missouri Regional Science Fair Committee Members

Director: Dr. Chris McGowan
Dean, College of Science, Technology & Agriculture at Southeast Missouri State University

SRC Chair: Dr. Steve Overmann
Director, Environmental Science Program at Southeast Missouri State University

Chief of Judges: Dr. David Probst, Southeast Missouri State University
Chairperson, Department of Physics & Eng. Physics at Southeast Missouri State University

Members:
Mr. Mark Gihring, teacher, Oak Ridge
Mr. Mark Kneer, The Southeast Missourian
Mr. Mark Mehner, Drury Southwest
Ms. Marilyn Peters, Retired teacher, St. Vincent de Paul, Cape Girardeau
Ms. Pam Mills, Retired teacher, T.S. Hill Middle School, Dexter
Ms. Theresa Buttry, Physics, Southeast Missouri State University
Ms. Jamie Birkman, Mathematics, Southeast Missouri State University
Ms. Wilma Huffman, Dean’s Office, Southeast Missouri State University
Calendar of Events

Science Fair Entry Form Deadline – Tuesday, February 10th, 2015

Electronic Entry Forms will be available on-line beginning January 5, 2015

After electronic submission of all entry forms,
Please print and sign forms next to printed names on the e-mail confirmation.

Mail a signed copy of entry form (and other forms where applicable)
with registration fee so it is received by February 10th, 2015 to:

Southeast Missouri Regional Science Fair
    c/o Wilma Huffman
College of Science, Technology & Agriculture
One University Plaza – MS 6800
Cape Girardeau, MO  63701

Tuesday, March 10, 2015

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>9:30 a.m.</td>
<td>Set-up begins</td>
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<tr>
<td>11:00 a.m.</td>
<td>Set-up must be completed</td>
</tr>
<tr>
<td>12:00 p.m.</td>
<td>Judging begins – no students present</td>
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<tr>
<td>1:00 p.m.</td>
<td>Judging continues – students must be present</td>
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<tr>
<td></td>
<td>Fair Director to meet with Teachers during Judging</td>
</tr>
<tr>
<td>3:00 p.m.</td>
<td>Students dismissed; final judging – no students present</td>
</tr>
<tr>
<td>3:30 p.m.</td>
<td>Science Fair open to public viewing</td>
</tr>
<tr>
<td>6:30 p.m.</td>
<td>Award Reception for exhibitors, their families and teachers</td>
</tr>
<tr>
<td>7:30 p.m.</td>
<td>Awards Program – students must be present</td>
</tr>
<tr>
<td>9:00 p.m.</td>
<td>Science Fair closed to public viewing</td>
</tr>
<tr>
<td></td>
<td>Project removal (No exhibits may be removed prior to 8:30 p.m.)</td>
</tr>
<tr>
<td>9:30 p.m.</td>
<td>All projects must be removed</td>
</tr>
</tbody>
</table>

Questions:

Contact

DR. CHRIS MCGOWAN
573 651-2163        FAX (573) 651-2223
regscifair@semo.edu

OR

DR. STEVE OVERMANN
Regional Science Fair
Scientific Review Committee Chairperson
(573) 651-2386
Checklist for the 59th Annual Southeast Missouri Regional Science Fair
(Items are to be sent on or before Tuesday, February 10, 2015)

JUNIOR DIVISION

APPLICATION FORM

ENTRY FEE ($10.00/exhibit/ $15.00 if exhibit requires electricity)

SENIOR DIVISION

ENTRY FORM (The ABSTRACT is now part of the entry form. Abstract should be no longer than 250 words.)

ENTRY FEE ($10.00/exhibit/ $15.00 if exhibit requires electricity)

FORM 1 – Checklist for Adult Sponsor Completed form required for ALL projects and must be completed before experimentation.

FORM 1A – Student Checklist; Research Plan Instructions. A complete research plan is required and must accompany Checklist for Student, 1A. All signatures must be before proposed start date.

FORM 1B – Approval Form Completed form required for each student, including all team members.

FORM 1C – Regulated Research Institutional or Industrial Setting Form (if required). This form must be completed after experimentation by the adult supervising the student research conducted in a regulated research institution, industrial setting or any work site other than home, school or field. This form must be displayed with your project; responses must be on the form.

FORM 2 – Qualified Scientist Form (if required). May be required for research involving human participants, vertebrate animals, potentially hazardous biological agents, and DEA-controlled substances. Must be completed and signed before the start of student experimentation.

FORM 3 – Risk Assessment Form (if required). Required for projects using hazardous chemicals, activities or devices and microorganisms exempt from pre-approval. Must be completed before experimentation.

FORM 4 – Human Participant and Informed Consent Form (if required). Required for all research involving human participants not at a Regulated Research Institution. If at a Regulated Research Institution, use Institutional Approval Forms for documentation of prior review and approval. (IRB approval required before experimentation.)

FORM 5A – Vertebrate Animal Form (if required). Required for all research involving vertebrate animals that is conducted in a school/home/field research site. (SRC approval required before experimentation.)

FORM 5B – Vertebrate Animal Form (if required). Required for all research involving vertebrate animals that is conducted at a Regulated Research Institution. (IACUC approval required before experimentation.)

FORM 6A – Potentially Hazardous Biological Agents Risk Assessment Form (if required). Required for research involving microorganisms, rDNA, fresh/frozen tissue (including primary cell lines, human and other primate established cell lines and tissue cultures), blood, blood products and body fluids. SRC/ IACUC/ IBC approval required before experimentation.

FORM 6B – Human and Vertebrate Animal Tissue Form (if required). Required for research involving fresh/frozen tissue (including primary cell lines, human and other primate established cell lines, and tissue cultures), blood, blood products and body fluids. If the research involves living organisms, please ensure that the proper human or animal forms are completed. All projects using any tissue listed above must also complete Form 6A.

FORM 7 – Continuation Projects Form. Required for projects that are a continuation/progression in the same field of study as a previous project. This form must be accompanied by the previous year’s Abstract and Research Plan.
CATEGORY DESCRIPTIONS

Behavioral & Social Sciences (BSS)
Any study such as is done by sociologists, anthropologists, psychologists, linguists, etc. that examines animal activities to discover recurrent patterns. For example: trigger of fear, learned behavior, actuality of prejudice, effect of color on choice, pecking order, group size. Because of protocol restrictions it is better to do observational studies in natural settings.

Biochemistry (BIO)
The chemistry of life processes such as respiration, photosynthesis, enzymes, diffusion, etc. Study focuses on the chemicals and their reactions. For example: reactants of products of processes, conditions which enable or regulate rate of reaction. All types of investigation design is possible in this category: collection, observation, model, experiment and invention.

Botany (BOT)
Studies of plants, their life cycle, structure, growth, processes, and classification. Sciences of agriculture, agronomy, taxonomy, etc. For example: algae growth, leaf gas exchange, power of swelling seeds, germination, development sequence, tropism responses. All types of investigation design are possible; collection, observation, model, experiment and invention.

Chemistry (CHM)
Study of matter, its composition and its interactions. Includes inorganic and organic matter, natural and man-altered materials. For example: pH of household substances, controlling rate of reaction, producing a desired substance. All five types of studies are possible: collection, observation, model, experiment and invention. Be careful of dangerous chemicals.

Earth & Space Sciences (ESS)
Deals with the soil, water and air of our planet and objects in space. Includes geology, meteorology, astronomy. For example: identify rocks or stars, forecast weather. All five types of studies are possible – collection, observation, model, experiment and invention.

Engineering (ENG)
Deals with putting scientific knowledge to work. Includes civil, chemical, electrical, or mechanical engineering. For example: building robots, new electrical switches, faster pine wood derby cars, etc. All five types of studies are possible. Models and inventions are frequently used.

Environmental Sciences (ENV)
Response of living organisms to man-altered or to nature-altered environment. For example: pollution effects, disaster effects, profile of organism density in a specific environment. The experiment type of investigation is generally done in this category.

Mathematics & Computer Sciences (MCS)
Deals with numbers: types, relationships and manipulation. Includes algebra, geometry, calculus. For example: abacus design, pattern of repeating decimals, families of numbers. Also includes studies which modify or use the computer hardware or computer software in a new way. For example: using an application in a new way. Collections, models and inventions are used frequently.
Medicine & Health (MED)
Studies of diagnosing, improving, and preserving health. Includes disciplines such as medicine, dentistry, ophthalmology, nutrition, speech, hearing, etc. For example: monitoring health aspects of persons enrolled in diet or body-building programs, checking for hearing or sight loss. Because of protocol the types of investigations which are most often done are collections, observations, or models.

Microbiology (MIC)
Studies of microorganisms such as algae, fungi, protozoans, virus and bacteria and their life processes. For example: bacteria in milk, water or soil, growth rates, identity of organisms. Five types of studies can be done in this category. Be careful of pathogenic agents which require protocol.

Physics (PHY)
Deals with the energy of matter interactions. Includes motion, mechanics, electricity, sound, light, etc. For example: forces on a falling object, trajectory of an object, electrical circuits, etc. All five types of investigations are used.

Zoology (ZOO)
Study of animals, life cycle, anatomy, classification. Includes herpetology, entomology, husbandry, etc. For example: identify, classify, earthworm growth, butterfly life cycle, unique structure. All five types of studies can be done. Beware of protocol required for vertebrates.
DETERMINING PROJECT CATEGORIES

Please Note: It is impossible to develop category descriptions that apply to any and all projects absolutely. The increasingly interdisciplinary nature of science and engineering means that many projects will draw on more than one field. To determine a project category, it may be necessary to identify the primary emphasis. For example, limnology is defined as the scientific study of the physical, chemical, meteorological, and biological conditions in fresh water. The primary emphasis of a limnology project should be examined, and placed accordingly.

INSTRUMENTS: The design and construction of a telescope, bubble chamber, laser, or other instrument would be Engineering if the design and construction were the primary purpose of the project. If a telescope were constructed, data gathered using the telescope, and an analysis presented, the project would be placed in Earth and Space Sciences.

MARINE BIOLOGY: Behavioral and Social Sciences (schooling of fish), Botany (marine algae), Zoology (sea urchins), or Environmental Sciences (plant/animal life of river, pond).

FOSSILS: Botany (prehistoric plants), Chemistry (chemical composition of fossil shells), Earth and Space Sciences (geological ages), or Zoology (prehistoric animals).

ROCKETS: Chemistry (rocket fuels), Earth and Space Sciences (use of a rocket as a vehicle for meteorological instruments), Engineering (design of a rocket), or Physics (computing rocket trajectories).

GENETICS: Biochemistry (DNA studies), Botany (hybridization), Microbiology (genetics of bacteria), or Zoology (fruit flies).

VITAMINS: Biochemistry (how the body deals with vitamins), Chemistry (analysis), or Medicine and Health (effects of vitamin deficiencies).

CRYSTALLOGRAPHY: Chemistry (crystal composition), Mathematics (symmetry), or Physics (lattice structure).

SPEECH AND HEARING: Behavioral and Society Sciences (reading problems), Engineering (hearing aids), Medicine and Health (speech defects), Physics (sound), or Zoology (structure of the ear).

RADIOACTIVITY: Biochemistry, Botany, Medicine and Health, and Zoology could all involve the use of tracers. Earth and Space Sciences or Physics could involve the measurement of radioactivity. Engineering could involve design and construction of detection instruments.

SPACE-RELATED PROJECTS: Note that many projects involving space do not go into Earth and Space Sciences. Botany (effects of zero G on plants), Medicine and Health (effects of G on humans), or Engineering (developing closed environmental system for space capsule).

COMPUTERS: If a computer is used as an instrument, the project should be considered for assignment to the area of basic science on which the project focuses. Physics (used to calculate
rocket trajectories), **Chemistry** (calculate estimates of heat generated from a specified inorganic chemical reaction), or **Behavioral and Social Sciences** (used as a teaching aid).
Display and Safety Authority
The Intel ISEF Display and Safety Committee is the final authority on display and safety issues for projects approved by the SRC to compete in the Intel ISEF. Occasionally, the Intel ISEF Display and Safety Committee may require students to make revisions to conform to display and safety regulations. The Regulations that follow have been divided into two main categories to separate those that deal specifically with display regulations and those that pertain to safety regulations.

DISPLAY REGULATIONS
The following regulations must be adhered to when a finalist exhibits a project at Intel ISEF

Maximum Size of Project
Depth (front to back): 30 inches or 76 centimeters
Width (side to side): 48 inches or 122 centimeters
Height (floor to top): 108 inches or 274 centimeters

Please be aware when ordering posters that the mechanism that supports the poster should conform to the maximum size limitations stated above.

At the Intel ISEF, fair-provided tables will not exceed a height of 36 inches (91 centimeters). Maximum project sizes include all project materials, supports, and demonstrations for public and judges. If a table is used, it becomes part of the project and must not itself exceed the allowed dimensions nor may the table plus any part of the project exceed the allowed dimensions.

Nothing can be attached to the rear curtain for display, and any framework supporting the display must be within the allowable dimensions.

At the Intel ISEF, any project with a component that will be demonstrated by the finalist must be demonstrated only within the confines of the finalist’s booth. When not being demonstrated, the component plus the project must not exceed the maximum size dimensions for a project.

Position of Project
Table or freestanding display must be parallel to, and positioned at, the back curtain of the booth.

Display Content for Research Institution and/or Continuation Projects
The project display summarizes the research project and must focus on the student(s) work for this year’s study with only minimal reference to previous research. Longitudinal studies may present only conclusionary data from prior years. [Exception: the project title of the display board may mention years or which year the project is (for example, “Year Two of an Ongoing Study”).] Only one display board/project is permitted. Project boards may not be layered. Continuation projects must have the Continuation Project Form (7) vertically displayed.

In addition, the project display must be limited to the work conducted by the student(s) for the project. The mentor’s research, even if it was a precursor to student experimentation (e.g. animal research from which tissue was obtained for the project) is not a part of the student research project and must not be included in the display. Very minimal reference to work done by a mentor or others may be included only for background information or clarification of what the student’s research covered and must clearly indicate that it was not part of the student’s work.

Forms Required to be Visible and Vertically Displayed
The only items that may be displayed on the front of the tables provided are the forms listed below. All finalists must display vertically the following documents:

1) Original of official Abstract and Certification as approved and stamped/embossed by the Intel ISEF Scientific Review Committee.

2) Completed Intel ISEF Project Set-up Approval Form SRC/DS2 (Received on-site at the Fair)
If either of the following documents is required, it must be displayed vertically.

1) Regulated Research Institutional/Industrial Setting Form (1C) — if applicable
2) Continuation Projects Form (7) — if applicable

The suggested placement of the Abstract and Certification, ISEF Project Set-Up Approval Form SRC/DS2, Regulated Research Institution/Industrial Setting Form (1C) — if applicable, and Continuation Form (7) — if applicable is depicted on the diagram above.

**Forms Required at Project but not Displayed**

Forms including, but not limited to, Checklist for Adult Sponsor (1), Student Checklist (1A), Research Plan and Approval Form (1B) which are required for the project or for Scientific Review Committee approval do not have to be displayed as part of the project but must be available in the booth in case asked for by a judge or other Intel ISEF official. A photograph/video release form signed by the subject is required for visual images of humans (other than the finalist) displayed as part of the project.

**Informed Consent Forms not to be Displayed**

The SRC may require written informed consent. Informed consent documents are confidential and must not be at the project display.

**Photograph/Image Display Requirements**

Display of photographs other than that of the finalist must have a photo release signed by the subject, and if under 18 years of age, also by the guardian of the subject. Sample consent text: “I consent to the use of visual images (photos, videos, etc.) involving my participation/child’s participation in this research.”

Finalists using audio-visual or multi-media presentations (for example, 35mm slides; videotapes; images, graphics, animations, etc., displayed on computer monitors; or other non-print presentation methods) must be prepared to show the entire presentation to the Display and Safety inspectors before the project is approved.

Any photograph/visual image/chart/table and/or graph is allowed if:

1. It is not deemed offensive or inappropriate (which includes images/photographs showing invertebrate or vertebrate animals/humans in surgical, necrotizing or dissection situations) by the Scientific Review Committee, the Display and Safety Committee, or Society for Science & the Public. The decision made by any one of the groups mentioned above is final.
2. It has a credit line of origin (“Photograph taken by...” or “Image taken from...” or “Graph/Chart/Table taken from...”). (If all images, etc. being displayed were taken or created by the finalist or are from the same source, one credit line prominently and vertically displayed on the backboard/poster tabletop is sufficient.)
3. It is from the Internet, magazine, newspaper, journal, etc., and a credit line is attached. (If all photographs, etc. are from the same source, one credit prominently and vertically displayed is sufficient.)
4. It is a photograph or visual depiction of the finalist.
5. It is a photograph or visual depiction for which a signed consent form is at the project or in the booth.

**SAFETY REGULATIONS**

The following regulations must be adhered to when a Finalist exhibits a project at the Intel ISEF.

**Handouts Allowed at Project**

Official Abstract

Handouts to judges and to the public must be limited to UNALTERED photocopies of the official abstract and certification.

The Intel ISEF Scientific Review Committee defines the “official abstract and certification” as an UNALTERED original abstract and certification as stamped/embossed by the Intel ISEF Scientific Review Committee. If the Scientific Review Committee requires a finalist to make changes to the abstract and certification submitted with registration papers, the revised version will be stamped/embossed, will replace the earlier version, and will become the finalist’s official abstract and certification.

The only abstract allowed anywhere at a project is the official abstract. The term “abstract” may not be used as a title or reference for any information on a finalist’s display or in a finalist’s materials at the project except as part of displaying the official abstract. An original stamped/embossed official abstract and certification must appear on the display board or in a vertical position at the project.

Any disks, CDs, printed materials, etc. (including unofficial abstracts) designed to be distributed to judges or the public will be confiscated by the Display and Safety Committee and will be discarded immediately.
Items/Materials Not Allowed at Project

The following is a list of what cannot be displayed at the project:

1) Awards, medals, business cards, flags, logos, CDs, DVDs, Flash Drives, brochures, booklets, nor endorsements, give-away items (pens, key chains, etc.), and/or acknowledgments (graphic or written).
   (Exceptions: Flash drives, CDs, DVDs that are an integral part of the project and used for judging only with prior approval given during inspection; past and present Intel ISEF medals worn by the finalists.)
2) Postal addresses, World Wide Web, e-mail and/or social media addresses, QR codes, telephone, and/or fax numbers of a finalist.
3) Active Internet or e-mail connections as part of displaying or operating the project at the Intel ISEF
4) Prior years’ written material or visual depictions on the vertical display board. [Exception: the project title displayed in the finalist’s booth may mention years or which year the project is (for example, “Year Two of an Ongoing Study”)]. Continuation projects must have the Continuation Project Form (7) vertically displayed.

Other Display Regulations

1) No changes, modifications, or additions to projects may be made after approval by the Display and Safety Committee and the Scientific Review Committee.
2) Finalists who do not adhere to the signed agreement on the SRC/DSZ Form regarding this regulation will fail to qualify for competition. A project data book and research paper are not required but are highly recommended.
3) If a project fails to qualify and is not removed by the finalist, Society for Science & the Public will remove the project in the safest manner possible but is not responsible for damage to the project.
4) It is highly recommended that your project number be placed on all notebooks or materials that will be left at your booth.
5) Judges will preview projects without finalists present beginning at noon on Tuesday.

Not Allowed at Project or Booth

1) Living organisms, including plants
2) Soil, sand, rock, and/or waste samples, even if permanently encased in a slab of acrylic
3) Taxidermy specimens or parts
4) Preserved vertebrate or invertebrate animals
5) Human or animal food as part of the exhibitor demonstration of the project.
6) Human/animal parts or body fluids (for example, blood, urine)
7) Plant materials (living, dead, or preserved) that are in their raw, unprocessed, or non-manufactured state
   (Exception: manufactured construction materials used in building the project or display)
8) All chemicals including water (Projects may not use water in any form in a demonstration.)
9) All hazardous substances or devices [for example, poisons, drugs, firearms, weapons, ammunition, reloading devices, and lasers
10) Dry ice or other sublimating solids
11) Sharp items (for example, syringes, needles, pipettes, knives)
12) Flames or highly flammable materials
13) Batteries with open-top cells
14) Glass or glass objects unless deemed by the Display and Safety Committee to be an integral and necessary part of the project (for example, glass that is an integral part of a commercial product such as a computer screen)
15) Any apparatus deemed unsafe by the Scientific Review Committee, the Display and Safety Committee, or Society for Science & the Public (for example, large vacuum tubes or dangerous ray-generating devices, empty tanks that previously contained combustible liquids or gases, pressurized tanks, etc.)

Electrical Regulations at Intel ISEF

1) Cord-connected electrical appliances shall be UL/CSA-approved. Cord components should be listed with UL or CSA.
2) Electrical devices must be protectively enclosed. Any enclosure must be non-combustible. All external non-current carrying metal parts must be grounded using the above listed UL/CSA connection and materials.
3) Finalists requiring 120 or 220 Volt A.C. electrical circuits must provide a UL/CSA-listed 3-wire extension cord which is appropriate for the load and equipment. Only UL/CSA-approved extension cords in good repair shall be used.
4) Electrical power is supplied to projects; therefore, the maximum allowed for projects is 120 or 220 Volt, A.C., single phase, 60 cycle. No multi-phase will be available or shall be used. Maximum circuit amperage/wattage available is determined by the electrical circuit capacities of the exhibit hall and may be adjusted on-site by the Display and Safety Committee. For all electrical regulations, “120 Volt A.C.” or “220 Volt A.C.” is intended to encompass the corresponding range of voltage as supplied by the facility in which the Intel ISEF is being held.
5) All electrical work must conform to the Exhibit Hall regulations or the National Electrical Code. (www.nfpa.org/aboutthecodes/AboutTheCodes.asp?DocNum=70&cookie_test=1). The guidelines presented in these D & S regulations are general ones, and other rules may apply to specific configurations. The on-site electrician may review electrical work on any project.
6) All electrical connectors, wiring, switches, extension cords, fuses, etc. must be UL/CSA-listed and must be appropriate for the load and equipment. Connections must be soldered or made with UL/CSA-listed connectors. Wiring, switches, and metal parts must have adequate insulation and over-current safety devices (such as fuses) and must be inaccessible to anyone other than the finalist. Exposed electrical equipment or metal that possibly may be energized must be shielded with a non-conducting material or with a grounded metal box to prevent accidental contact.

7) All lighting used for decoration or illumination must be UL/CSA approved. Lamp wattage must not exceed ratings. Lighting must not pose risk of injury if touched. As low a voltage as possible must be used.

8) At the end of the day or the viewing period, all electrical exhibits must be disconnected, and power bars must be switched off.

9) Where practical and necessary, it is recommended that indicator lights be used to indicate that the voltage is on.

10) An insulating grommet is required at the point where the wire or cable enters any enclosure.

11) No exposed live parts over 36 volts are allowed. Current (amperage) must be low so as not to cause any discomfort or danger if touched.

12) There must be an accessible, clearly visible on/off switch or other means of quickly disconnecting from the 120 or 220 Volt power source.

13) Wet cells shall not be used because of the hazardous chemicals involved.

Laser Requirements
Lasers may be used in a finalist’s display under the following guidelines. Display and Safety Inspectors may revoke the privilege and require lasers to be removed if careless or indiscriminate use is observed. Serious offenses may result in revoking the right to display.

1) Class 1: A class 1 laser is safe under all conditions of normal use. It is allowed provided a finalist avoids indiscriminate exposure to other finalists, judges or visitors.

2) Class 1M: A class 1M laser is safe for all conditions of use except when passed through magnifying optics such as microscopes and telescopes. It is allowed provided the finalist avoids indiscriminate exposure to others and does not utilize magnifying optics in the area of the laser.

3) Class 2: A class 2 laser is safe because the blink reflex will limit the exposure to no more than 0.25 seconds. This only applies to visible-light lasers (400–700 nm).

4) Class 2M: A class 2M laser is safe because of the blink reflex if not viewed through optical instruments. This applies only to visible-light lasers (400–700 nm). It is allowed provided the finalist avoids indiscriminate exposure to others and does not utilize magnifying optics in the area of the laser.

5) Class 3R: A class 3R laser has a risk of injury if viewed directly. It cannot be used or displayed.

6) Class 3B: A class 3B laser has a risk of injury if viewed directly. It cannot be used or displayed.

7) Class 4: A class 4 laser has a risk of injury if viewed directly. It cannot be used or displayed.

Other Safety Regulations

1) Any inadequately insulated apparatus producing extreme temperatures that may cause physical burns is not allowed.

2) Any apparatus with unshielded belts, pulleys, chains, or moving parts with tension or pinch points must be for display only.

3) Society for Science & the Public, the Scientific Review Committee, and/or the Display and Safety Committee reserve the right to remove any project for safety reasons or to protect the integrity of the Intel ISEF and its rules and regulations.

4) Project sounds, lights, odors, or any other display items must not be distracting. Exceptions to this rule may be permitted for judging demonstrations. Approval must be given prior to judging.