

RULES AND REGULATIONS

Fifty-ninth ANNUAL

**MONTGOMERY COUNTY SCIENCE
RESEARCH COMPETITION**

To be held at

Ursinus College

Collegeville, Pennsylvania

on

week of MARCH 8-12, 2016

Sponsored by:

MONTGOMERY COUNTY SCIENCE TEACHERS' ASSOCIATION

MONTGOMERY COUNTY INTERMEDIATE UNIT #23

1605 W. Main St.--- Norristown, PA
610-539-8550

URSINUS COLLEGE

601 E. Main St. --- Collegeville, PA
610-409-3000

Philip Rittenhouse – Director

Germantown Academy

267-614-8084 (cell) or 215-996-9953(home)

Email: philip.rittenhouse@germantownacademy.org

Melody J. Leithold – Asst. Director **North Penn High School**

215-285-0870 (cell) or 215-234-0466 (home)

Email: leithomj@npenn.org

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The forms that students need to fill out for the protocol are found in the ISEF Rules booklet and can be downloaded at the Science Service website:

www.societyforscience.org/isef

INTRODUCTION

These are the rules for the Montgomery County Science Research Competition (MCSRC) for the year 2015-2016 competition. All sponsors, teachers, and students **MUST** read and comply with this booklet and the 2016 International Science and Engineering Fair (ISEF) Rules Booklet. There are some guidelines/rules in the ISEF Rules Booklet that **do not** pertain to the county competition. Furthermore, in some areas the MCSRC Rules may supercede the ISEF Rules. If you have any questions regarding the rules, please contact the Director(s) immediately. It is the responsibility of each sponsor to adequately supervise each student's progress and get approval for further work.

The development of the scientific method can be enhanced when teachers and supervisors insist that research has clearly defined objectives. Research must be quantitative in nature (taking number data) and be age appropriate. The appropriate certification forms (found in the ISEF Rules Booklet and at the Science Service website (www.societyforscience.org/isef) must be completed **prior to the start of the research** (see below).

**** Only schools that have not participated in the last two years **MUST** have at least one teacher-sponsor attend a rules meeting this year. This is **MANDATORY** due to a number of new guidelines. This should provide each school with have an adequate understanding of the rules of the Competition. **Failure to have your school attend a meeting will disqualify your school from participating in this year's competition!** Bring a downloaded (hard) copy of the ISEF rules from www.societyforscience.org and a copy of these MCSRC rules.

Contact Phil Rittenhouse or Melody Leithold to schedule a meeting

OR

Attend the MCSRC session at the mini-convention on October 29th at Upper Dublin High School.

Critical Information!!

Each teacher-sponsor is responsible for reading the following rules and explaining them to all students who will be participating in the Competition. Certain forms are **required for all projects**, regardless of subject. These include the following: **Form (1)**, *Checklist for Adult Sponsor*, **Form (1A)**, *Student Checklist including "Research Plan"*, and **Form (1B)**, *Approval Form*. **Please note that these forms need to be completed with approvals BEFORE the student(s) begin data collection!**

*****Any** projects involving vertebrate animals, "Potentially Hazardous Biological Agents"(formerly, "pathogenic agents"), human subjects, as well as projects that contain risk require additional approval. For **any and all Human Subjects projects**, prior to the start of the investigation, **approval of an IRB**, which is an Institutional Review Board that is created in your school must be obtained, and if indicated by the IRB, **approval by the SRC (Scientific Review Committee)** which is a group of teacher volunteers from MCSRC who meet to review these protocols. For projects dealing with vertebrate animals, "Potentially Hazardous Biological Agents", as well as projects that contain risk, **approval by the SRC (Scientific Review Committee) is required**. Check the calendar in this book as well as the MCSTA website (www.MCSTA.org) for dates to have your projects approved by the SRC. **A student must have approval from both the IRB(for humans) and the SRC before he/she can begin his/her research.** Non-compliance will mean disqualification of the project. Read the ISEF RULES booklet for the rules that govern certification for projects using humans, "Potentially Hazardous Biological Agents", vertebrate animals and rDNA. All of the above forms are found in the ISEF Rules Booklet and may also be downloaded online at www.societyforscience.org/isef. There is a great "Rules Wizard" to help you determine the forms you need for the project after you have answered a few questions about the project.

THE 2016 MONTGOMERY COUNTY SCIENCE RESEARCH COMPETITION

The 59th annual Montgomery County Science Research Competition will be held the week of March 5 to 13, specific details will be announced when they are available. The known dates for this year's competition is as follows:

Oct 3, Oct 31, Dec 5

Saturday SRC meetings at North Penn High School

Tuesday, Dec 15

All corrected protocols must be to Phil or Melody (no new protocols)

Wednesday, Jan 6

Start of internet registration. Sponsor contact info will be collected at the rules meetings and passwords provided accordingly. Protocol information is to be entered via internet **BY TEACHER-SPONSOR ONLY!**

Wednesday, Jan 20

End of internet registration.

Wednesday, Jan 27

Registration Meeting - This is the deadline for entry application sheets, registration forms, certification forms **with preliminary abstract attached using MCSRC abstract form**, and 2 checks: one for the total student registrations(\$15/student) and one \$50 check for school registration. This check will be refunded if your school sends one person(or more) to help with table set-up and one person (or more) to take down the tables & help clean up after the competition. Everything must be hand delivered to the Director(s) between 3:00 PM and 5:30 PM at North Penn High School, Lansdale in Room C18.

Saturday, Feb 5

All protocols reviewed for fair entry. **VOLUNTEERS NEEDED!!!** Contact Phil or Melody

Saturday, Feb 27

Deadline to email director the names of people who will be representing your school for table setup and for take down on

Tuesday, March 8

Setup at the Ursinus Field House - each school should have a representative there. We start at 4 PM and are usually done in 2 hours if we have enough help. **WE NEED YOU!!!!**

Wednesday, March 9

Project Setup - (There is NO electricity at MCSRC or DEL VAL.) Setup of registered projects will begin at 8:00 AM. The setup will end at 5:30 PM. Students must be off the floor at this time. No student will be permitted to the floor for setup after 5:00 PM. Students should bring a blue or black pen for completing the approval forms as well as any equipment (tape, pliers, hammer, etc.) to help setup. **Also bring 10 copies of the project's abstract on MCSRC abstract form.** One copy is to be handed in at the registration table with the project number on the upper right hand corner. One copy should be mounted **on the board in the upper left hand corner.** The rest are left with the project. The project number should be put on all of items (logbooks, research papers, etc) **including abstracts** at your display. NO school names should appear on any papers or the front of the board. **On the back, bottom center of the board should be the student and school name AND school phone number ONE INCH HIGH.** Students who have computers with their exhibit may bring them to setup prior to 8:45 AM for high school and prior to 1:30 PM for middle school on judging day. These should be taken home after judging. **A card found at the project site will be filled out indicating participation in the Delaware Valley Science Fair in April if selected to go. Hand this card in also.**

Thursday, March 10

Judging Day 9:00 – 12:00 PM - Divisions A, B, C, & D (Grades 12-9)

All exhibitors must be at their projects at 9:00 AM. Students will sit at their projects for the judging. They must remain at their project until the Director dismisses them. Projects are to be taken home after the judging is completed. **There will be no public viewing of projects this year.** No cell phones or walkie-talkies are to be used during judging.

1:30 – 5:00 PM Division E (Grades 6-8)

All exhibitors must be at their projects at 1:30 PM. Students will sit at their projects for the judging. They must remain at their project until the Director dismisses them. Projects are to be taken home after the judging is completed. **There will be no public viewing of projects this year.** No cell phones or walkie-talkies are to be used during judging.

The numbers of the winning projects will be posted on the Internet at the end of the judging that evening after 7 PM. Once again, the Special Award winners will be kept separate from the regular Division winners.

ASSISTANCE by each school is needed to take down tables and pack MCSRC materials starting as soon as students are dismissed at 5PM.

Saturday March 12

Divisions A-D (High School) Awards Grades 9-12

Division E (Middle School) Awards Grades 6 - 8

Awards presentations at Ursinus (Times TBA)

CHECKLIST FOR REGISTRATION MEETING, WEDNESDAY, JANUARY 27, 2016

You must bring your entries to the Registration Meeting at North Penn High, Lansdale, Room C18. All forms should be copies. **YOU KEEP ORIGINALS!** Be sure that the copies are DARK enough to be easily read and further copied. Each student's entry must include the following bundled in this order:

1. The Division Student Registration List with students' names, categories and sponsors. You can use the one provided in this booklet or you can use the Internet copy.

*****DO NOT CHANGE THE FORMAT*****

*****Project name MUST match forms to internet registration!*****

2. The completed Individual Student Registration Form with proper signatures completed. This form can be found at the end of this booklet. **Do not forget that there are two sides to this form!**

*****DO NOT CHANGE THE FORMAT*****

*****Project name MUST match forms to internet registration!*****

Each registered project must have the following:

3. The Checklist for Adult Sponsor Form (1)
4. Research Plan (1A) with a complete research plan - problem, hypothesis, detailed procedure and bibliography **typed** on a separate sheet
5. The preliminary abstract must be attached to the front of A. (Write the final abstract after the project is completed, not before. This is a summary of your work. The abstract **may** be **modified** between now and the fair.)

6. Approval Form (1B) complete with all signatures.
7. Any other forms needed as required by rules for student's project. (If you tested risk issues, potentially hazardous biological agents, humans (including surveys/questionnaires), risk projects or vertebrate animals, you must also attach the appropriate forms with both the IRB's and the SRC's signatures. **Do NOT send in the original copies. Make photocopies and hand those in. Be sure your copies are dark enough to be read.** The student or teacher should keep the original forms
8. One check from your school which covers student registration @ \$15.00 per student. A separate check for \$50.00 which covers the school registration. This will be returned to you providing your school sends a representative to help with table set-up and tear down.

IMPORTANT ITEMS

1. **MCSRC - Abstract**

Students must include a typed abstract using the abstract form provided by MCSRC. You DO NOT have to reformat the abstract for Del- Val if selected to go on.. *The project title should be at the top.* Abstracts **must be 250 words or less!** Use the font, Times New Roman, or something similar to the style of print in this booklet. The font size should be 12 point. You may remove the instructions at the bottom of the form.

2. **One abstract should be visible on the display board in the upper left hand corner.**

3. **Display Set Up**

The high school display area will be set up by categories first and then divisions. The same categories will be together. For example, all the Behavior projects would be together: A-100's, B-100's, C-100's and D-100's. Middle School will be divided by categories. Students in grades 6-8 compete together in the same category.

4. **The display area will not be open to the public this year.**

Due to the limited time we will have the students take their projects home immediately upon the **completion** of their judging.

5. **Display Area Cell Phone Rule**

No cell phones or walkie-talkies may be used during the judging. They will be confiscated and students will be able to pick them up at the registration table after being dismissed.

6. **Computer Use**

If students are going to use computers at their display, every effort should be made to use a portable laptop. **No electricity will be available at MCSRC or Del VAL.**

7. **Category For Middle School Only – Consumer Science**

8. **Student Harassment of Adults and Other Students**

Repeated contact by the student or person(s) representing the student with the purpose of changing official decisions will suspend the student and possibly the school from participation the following year.

DEFINITIONS / RESPONSIBILITIES

STUDENT PARTICIPANT – any student in 6th through 12th grade currently enrolled in a Montgomery County public, private, parochial, charter, or home school. The student may enter as an individual research project or a team of two or three students. All team members must be from the same school. Teams may not change to individual entries or vice versa once paperwork indicating the designation has been submitted.

SPONSOR – this person must be the student’s current teacher or if that teacher is not participating, a teacher in the student’s school. If the school is not participating, this may be a current teacher in another participating school within the student’s district. If there are no schools participating in student’s district, another teacher in a participating school from another district may “umbrella” the student. The teacher-sponsor **MUST** contact the director about the switch.

SCHOOL LIASON/SUPERVISOR/CONTACT PERSON-this person is a teacher or administrator who attends rules meetings on behalf of all of the science teachers in his/her school and acknowledges the responsibility for transmitting all rules/registration information and dates to the faculty that are acting as sponsors. This person may also be a sponsor for his/her own students.

MENTOR – this person is an expert in the student’s field of research. He/she provides the student with information on the topic and/or guidance in the experimental methods used. This person may be a teacher-sponsor, independent research professional, or parent. This person does not have to act as the Qualified Scientist or Designated Supervisor.

QUALIFIED SCIENTIST- this person holds a graduate degree (or an undergraduate degree with many years of employment experience) in the student’s field of study and is able to offer expert advice on the topic and vouch for the safety of the experimental procedures. This person may be the teacher-sponsor, parent, or independent research professional.

DESIGNATED SUPERVISOR – this person will directly oversee the student as he/she performs the experiment. If required, it is expected that the DS will have some training to ensure safety as the experiment is carried out.

IRB (Institutional Review Board) – this is a board of three individuals who review all student research proposals involving humans. The sponsor will select the IRB members for each student as needed. They do not all have to be from the sponsor’s school. The board is composed of an administrator, a teacher (other than the sponsor), and a medical professional from a discipline-appropriate field to the research topic. They will determine the risk involved in the experiment and give approval for it to continue. They will determine if the protocol needs further approval by the SRC. **NOTE:** If a person signs the IRB – he/she **MAY NOT** sign anything else.

SRC (Scientific Review Committee)- this committee works at the MCSRC level. It is composed of teachers in various science disciplines and grade levels from various Montgomery County schools. They review all protocols identified by ISEF rules as needing special approval because the research deals with humans, vertebrate animals, microbes, or hazards as defined by ISEF rules. No project studying these topics may start until they have received SRC approval.

CLASSIFICATION OF EXHIBITS

There are 7 major divisions of exhibits: Division A (grade 12), Division B (grade 11), Division C (grade 10), Division D (grade 9), and Division E (grades 6-8), Team Projects; Division H – high school (grades 9-12), Division M – middle school (grades 6-8). Any public, private or parochial school located in Montgomery County as well as any home schooling association is allowed to enter students in the competition. However, **each school must send a representative to one of the rules meetings so that their school will be eligible to enter.**

INFORMATION FOR ALL DIVISIONS

Each school may enter a maximum of 24 projects in each division for Divisions A, B, C, D and E. In this 24 may be included up to two team projects. The maximum total number of projects from a school will be 24 for a school. The team projects **WILL BE PLACED AND JUDGED IN SUBJECT CATEGORIES THIS YEAR.** They will count in the total allowed for that category. Thus a school with grades 9 – 12 may enter a maximum of 96 projects. For Division E, each school may enter up to 24 projects (24 may include up to two teams). A school may not put more than 3 projects in a given category in a division **THIS INCLUDES THE TEAM PROJECTS.** For example: Main Street High School may have no more than 3 Botany projects in Division A, 3 Botany projects in Division B, etc. This is to encourage more projects to be attempted in the smaller categories and to reduce the number of projects in some of the larger categories. The teams would count toward these three.

Teachers are urged to review the placement of a student's project so that it is entered in the most correct category. If the project is incorrectly placed, it must be judged in the incorrect category. No changes will be allowed at the time of setup or judging. If you have a question, call the director or assistant director for help in the correct placement.

Mistakes can be made when the teacher inputs the project on the Internet registration. Be very careful when you type in your registration info on the computer. **If there is a discrepancy, the internet registration will be the official category that will be used by the fair for placement BECAUSE ONLY the teacher should be entering the information for MCSRC.**

CATEGORIES FOR EXHIBITS

Behavioral and Social Sciences (100's): Human and animal behavior, social and community relationships – psychology, sociology, anthropology, archaeology, ethology, linguistics, learning, perception, urban problems, reading problems, public opinion surveys, educational testing, etc.

Biochemistry (200's): Chemistry of life processes – molecular biology, molecular genetics, enzymes, photosynthesis, blood chemistry, protein chemistry, food chemistry, hormones, etc.

Botany (300's): Study of plant life – agriculture, agronomy, horticulture, forestry, plant taxonomy, plant physiology, plant pathology, plant genetics, hydroponics, algae, etc.

Chemistry (400's): Study of nature and composition of matter and laws governing it – physical chemistry, organic chemistry (other than biochemistry), inorganic chemistry, materials, plastics, fuels, pesticides, metallurgy, soil chemistry, etc.

Computer Science (500's): Study and development of computer hardware, software engineering, Internet networking and communications, graphics (including human interface), simulations / virtual reality or computational science (including data structures, encryption, coding and information theory).

Earth and Space (600's): Geology, mineralogy, physiography, oceanography, meteorology, climatology, astronomy, speleology, seismology, geography, etc.

Engineering (700's): Technology; projects that directly apply scientific principles to manufacturing and practical uses – civil, mechanical, aeronautical, chemical, electrical, photographic, sound, automotive, marine, heating and refrigerating, transportation, environmental engineering, etc.

Environmental Science (800's): Study of pollution (air, water, and land) sources and their control; ecology.

Mathematics (900's): Development of formal logical systems or various numerical and algebraic computations, and the application of these principles – calculus, geometry, abstract algebra, number theory, statistics, complex analysis, probability.

Medicine and Health (1000's): Study of diseases and health of humans and animals – dentistry, pharmacology, pathology, ophthalmology, nutrition, sanitation, pediatrics, dermatology, allergies, speech and hearing, etc.

Microbiology (1100's): Biology of microorganisms – bacteriology, virology, protozoology, fungi, bacterial genetics, yeast, etc.

Physics (1200's): Theories, principles, and laws governing energy and the effect of energy on matter – solid state, optics, acoustics, particle, nuclear, atomic, plasma, superconductivity, fluid and gas dynamics, thermodynamics, semiconductors, magnetism, quantum mechanics, biophysics, etc.

Zoology (1300's): Study of animals – animal genetics, ornithology, ichthyology, herpetology, entomology, animal ecology, paleontology, cellular physiology, circadian rhythms, animal husbandry, cytology, histology, animal physiology, invertebrate neurophysiology, studies of invertebrates, etc.

Team Projects (1400's/1500's): Study conducted by two or three students in any discipline. Each student should do a significant aspect of the study. The project is presented as a group but only one display board can be exhibited. The project can be in any field of study or an integrated project that involves more than one field. See the ISEF Booklet for more information.

Consumer Science (1600's): **Middle School Only.** The science of the normal use of consumer products. Students may choose to use this category or enter their project in one of the other categories. This choice depends on the emphasis of the project.

It is impossible to develop category descriptions, which can be applied to any and all projects without some questions. Try to determine the primary emphasis of the project and enter it in that category. The teacher should work with the student and give final approval for the category to be entered. Once the project is registered and entered in that category, it will be judged in that category! No switching of projects by the student or teacher is allowed once registration is completed. It is extremely important that the student and the teacher both agree that the project should be in the given category. **If you have questions about the category placement, contact the Director and he/she will assist you in project placement.**

These Areas REQUIRE Review and Approval by SRC and/or IRB PRIOR to experimentation:

NOTE: NO FIREARMS of ANY TYPE. NO MOTORIZED VEHICLES RIDDEN.

Humans – Read the ISEF Rules Booklet Human Subject section. **All require prior IRB approval and indicates risk. If more than minimal risk, it needs SRC approval.** The student will need to use a Qualified Scientist Form (2).

Examples of Qualified Scientists that can be used:

- For a Questionnaire / survey – psychiatrist, psychologist, etc.
- For a Risk project—Risk is defined as any of the following:
 1. Exercise – medical doctor, pediatrician, physical therapist, etc.
 2. Emotional stress – medical doctor, psychiatrist, psychologist, sociologist, etc.
 3. Ingestion – medical doctor, nutritionist, pharmacologist, pediatrician, etc.
 4. A protected group—children under 18, inmates, special education people, etc.

If the student is using an Informed Consent Form they must have a Qualified Scientist Form (2) completed in detail. **The Informed Consent can be waived by the IRB under certain conditions.** Check the ISEF Rules Booklet for the criteria and other forms that might be necessary.

Nonhuman Vertebrate Animals – Read the ISEF Rules Booklet on Nonhuman Vertebrate Animal Use. **Requires prior SRC approval** for studies conducted in a non-regulated site (home, school, farm, etc.) the research may only be conducted if it involves behavioral, observational or supplemental nutritional studies on animals AND the research involves only non-invasive and non-intrusive methods that do not negatively affect an animal's health. The student will need to complete a Vertebrate Animal Form (5A) and a Qualified Scientist Form (2). All other studies involving vertebrate animals must be conducted in a regulated research institution. These projects must be approved by that institution's IACUC (Institutional Animal Care and Use Committee) before experimentation begins. In addition, students must complete forms 1C (Regulated Research Institution Form, a Vertebrate Animal Form (5B), a Qualified Scientist Form (2) & a Risk Assess. Form (3), if applicable.

Potentially Hazardous Biological Agents-(formerly, “Pathogenic Agents”) - Read the ISEF Rules Booklet on Hazardous Biological Agents. **Requires prior SRC approval.** The student will need to use a Qualified Scientist Form (2). This person can be a bacteriologist, medical doctor, microbiologist, pathologist, virologist, etc.

Controlled Substances - Read the ISEF Rules Booklet on Controlled Substances.. **Requires prior SRC approval.** The student will need to use Qualified Scientist Form (2). This person can be a pharmacist, medical doctor, or someone trained in the use and handling of these substances.

Recombinant DNA (rDNA) - Read the ISEF Rules Booklet on Recombinant DNA and Potentially Hazardous Biological Agents.. **Requires prior SRC approval.** The student will need to use a Qualified Scientist Form (2). This person can be a bacteriologist, geneticist, virologist, pathologist, microbiologist, etc.

Human and Nonhuman Animal Tissue - Read the ISEF Rules Booklet on Tissues. **Requires prior SRC approval.** The student will need to use a Human and Animal Tissue Form (6A or 6B) and a Qualified Scientist Form (2). The qualified scientist can be a microbiologist, pathologist, research scientist, etc.

Hazardous Chemicals, Activities or Devices – Read the ISEF Rules Booklet on these hazards. Student must use a Risk Assessment Form (3). The Designated Supervisor must be directly responsible for overseeing student experimentation. **Does NOT Require SRC approval if serious injury or death is not a consideration.**

School representatives, sponsors, teachers and students should make sure that they read the ISEF Rules Booklet so that all the forms that are necessary for the student to begin data collection are completed and approved **prior** to experimentation. You can download forms or the entire booklet at www.societyforscience.org/isef

RULES FOR EXHIBITS

1. **Display**

A. Project Size

- 1) For Divisions A, B, C and D the maximum project size is:
48 inches (122 cm) wide - across the front
30 inches (76 cm) deep - from front to back
108 inches (274 cm) high - floor to top

Floor projects are allowed in these divisions but **the student and the sponsor must let the Director(s) know two weeks before setup.**

- 2) For Division E the maximum project size is:
36 inches (91.5 cm) wide - across the front
30 inches (76 cm) deep - from front to back
48 inches (144 cm) high - from table to top
No floor projects are allowed in Division E.

- 3) The maximum weight of a table project is 100 pounds.

B. The project must be self-supporting and fit inside the allotted space.

C. Names of schools **must not be seen on the front display** or in any written material. Number the subjects in your data to keep them anonymous.. Pictures of subjects are allowed with their approval. Indicate credit for pictures displayed. When the exhibitor receives the project number at registration put it on everything. Eliminate school names on log books, abstracts. This is to prevent the judges from any bias based on knowing the school. On the back of the board, in the **center bottom**, 1 inch high, place the student name, school name and phone number.

D. The display board should include:

- | | |
|--|-----------------------|
| - Abstract IN UPPER LEFT HAND CORNER ON MCSRC FORMAT | |
| - Experimental procedure | -Conclusion |
| - Problem/Question | - Data |
| - Hypothesis | - Analysis of results |

**** There should also be a written report that demonstrates that literary research has been done. It should note the principles and procedures involved with the project.**

****In addition a logbook should be kept from the beginning of the project to demonstrate the ongoing progress of the student.**

If the student tested subjects, the individual tests should be with the student in case the judges or fair officials request them but need not be displayed

E. In addition to the written report, there must also be **10 copies of your abstract on the MCSRC abstract format** of no more than 250 words left with the project. This is to give the judges a quick overview of the project. **This does not take the place of the written report or logbook.**

- F. **The display should not have live animals, any types of plant, bacteria, algae, liquids (including water), loose glassware, chemicals (including common household materials). Take pictures of these and display them. It is much more efficient to have pictures of the materials, plants, etc., and safer with this type of display.** It will in no way negatively affect the judging of the project. Refer to the ISEF Rules Booklet for Display and Safety Regulations.
- G. Be sure to read the ISEF Rules for all regulations. MCSRC follow those rules plus the information presented in this booklet. Some of the rules we use are specific to the Montgomery County Science Research Competition only! If you have any questions contact the Director or Assistant Director.

2. *Safety Regulations*

- A. Construction of exhibits must be safe and durable with all moving parts firmly attached and protected.
- B. The Setup Committee has the right to remove any materials that are not on display and/or disqualify any exhibit which, in its opinion, is not safe or which constitutes a hazard in a public exhibition, or does not comply with the rules and regulations found in this booklet and the ISEF Rules Booklet.

3. *Research Involving State and Federal Regulations*

- A. All research must have the correct certification forms completed and signed by the appropriate boards prior to the start of the project.

4. *Entry Deadlines*

--Internet Registration begins January 7 and ends January 21 at midnight. Procedures will be posted on www.MCSTA.org

--Registration Meeting (all protocols) –Tuesday, January 27, 2014 at North Penn High School, Lansdale Room C18. Bring all student forms, school registration check (\$50) and one check for total student registration fees (\$15/student).

- A. All Internet registration of students and their projects must be completed by the indicated date. Once the computer link is inactivated, you will NOT be able to register your students - resulting in ineligibility.
- B. All applications for exhibit must be typed or neatly printed in blue or black ink. All signatures must be complete for acceptance. Applications received: later than the deadline date listed in the calendar on page 2 of this booklet, or if the application is not completed, or if all of the appropriate certification forms are not included, will be disqualified. Photocopies of the certification forms should be brought with the application and the original forms kept safely by the student or sponsor. All photocopies must be clear and legible. **If they are not readable, they will be returned and the student may become disqualified if the registration is not completed by the final registration date.**
- C. Any exhibit not properly entered will not be permitted to exhibit at the competition.
- D. Teacher/sponsors should check all entry forms carefully to make sure that all the information is given accurately and completely.

All entry forms from each school should be checked carefully by your school representative for the Science Competition. He/she should assemble the forms, prepare the list of the students from that school and the 2 checks (school registration and total student registration) and bring them to the Registration Meeting on Tuesday, January 27th between 3:00 PM and 5:30 PM at North Penn High, 1340 Valley Forge Rd, Lansdale, Room C18

5. Project Set Up and Take Down

- A. The sponsor must report to the Registration Table to pick up the registration cards for his/her students. The certifiers' checklist will be at each student's display area. Each student must set up his/her own project or designate a parent, friend, or sponsor to set up. Exhibits not completely set up (with the exception of computers) by the end of setup day will not be approved for judging.
- B. Once the project is set up the student should make sure that everything on the checklist is in order. He/she then needs to find a certifier to certify that the project is approved for exhibition. Everyone must have his or her project certified prior to the student's leaving Montgomery County Community College on setup day. That checklist should be left at the display. The registration card, with corrections, a copy of the abstract with project number at the top, and Del Val participation form must be brought back to the registration table before the student leaves.
- C. Projects will be removed immediately following judging.

6. Judging

- A. The project is judged from two aspects: the project display and the personal interview. Prior to seeing the student the judges will review the information presented in the abstract and at the display. It is critical that the student presents the results in as clear a fashion as possible. The student will explain the project with the judges asking questions either during or after the oral presentation. It is critical for the student to understand the basic concepts of the project. This is where the student's background research plays a major role. The judges will ask questions to determine if the student has a strong grasp of the principles involved in the project as well as the basic scientific research techniques involved. If the student's project number is posted that evening at www.MCSTA.org, he/she should attend the Awards Ceremony. Dates and times to be announced.
- B. The judges use the following criteria for evaluating the project:

Creative Thought	30 %
Scientific Thought	30 %
Thoroughness	10 %
Skills	10 %
Clarity of Presentation	10 %
Visual Presentation	10 %

- C. Using the above criteria the judging evaluation is then based on:
 - The physical project display
 - The oral presentation
 - The responses given during the judges' questioning session

- D. The judging teams will be composed of professional science researchers, college science faculty, middle and high school science teachers. The judging team has the final decision on awards given.

7. *Awards and Special Awards*

- A. Each category may have only one first place award, one-second-place award, and one-third-place award. If a category has 3 or more entries a first, second, and third place award must be given. If there are fewer than 3 projects in the category, the judges' will follow the same procedure as used at the DVSF for placement of the awards. For example, if there are only two projects, they must give a 1st and 2nd. place award. If there is only one project, it must be given a 1st. In all categories having more than 3 entries, judges may and are encouraged to also select approximately 10% of the category as Honorable Mentions.
- B. **All senior and early graduates must fill in Senior Information Sheets and hand them in at the time of registration to determine eligibility for awards from the Scholarship Committee.** The awards are determined by their total number of points earned during Montgomery County Science Research Competitions (Grades 9-12). The student must participate in his/her senior year to be eligible. Also the MCSRC Senior Perseverance Awards are awarded based on this information.

1. **The Clyde Dry Award**

This award, in the amount of \$200, is given by the Montgomery County Science Teachers' Association in honor of Mr. Clyde Dry, former Director of the Montgomery County Science Research Competition. The award will be given to the senior or graduating junior accumulating the highest number of points over their senior high school years (Grades 9-12).

2. **The Richard Close Honorarium**

This award, in the amount of \$200, is given in honor of Mr. Richard Close, former Director of Montgomery County Science Research Competition. The award will be given to the senior or graduating junior accumulating the second highest number of points over their senior high school years (Grades 9-12).

- C. Special Awards - Many organizations and professional societies recognize student research efforts by awarding deserving students monetary prizes and gifts. These awards are also presented at the Awards Ceremony.
- D. Scholarships are often available to colleges and universities based on academic achievement.
- E. All seniors who have participated in the Montgomery County Science Research Competition for 3 or more years during grades 6-12 will be recognized by being awarded the **Senior Perseverance Award**. This award will be given at the Awards Ceremony in the form of a certificate.

APPENDIX

DO NOT CHANGE THE FORMAT OF THESE FORMS

When you make copies of the “Individual Registration Form”, use both sides of one sheet of paper e.g. back to back on one sheet of paper.

For the Individual and Group school roster forms, use the ones provided in this booklet.

ABSTRACT

Project title _____

Project number _____

250 words or less, 12 point font, Times New Roman type

Double space, Must stay within black box

(you may remove this wording at the bottom of this page)

MONTGOMERY COUNTY SCIENCE RESEARCH COMPETITION

School Roster - For Individual Projects

Maximum of three (3) projects in any one category per Division (include teams)

School Name: _____ Phone: _____

School Address: _____

Teacher/Sponsor: _____

Home address: _____

Teacher **Home** phone: _____ Teacher Email: _____

Number	Participant's Name	Division	Category	Sponsor
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				

22.				
23.				
24.				
<hr/> X	=	Total of Check		

NOTE!!!!

If any of the 24 projects are done by a team, Do NOT list them on this roster. Use the Group roster. Each school may send two team projects as part of the 24 projects entered by that school.

MONTGOMERY COUNTY SCIENCE RESEARCH COMPETITION

School Roster – For Group Projects

Each school district, private school or parochial school is allowed a maximum of two group projects at the high school level (grades 9-12) and two group projects at the middle school level (6-8) regardless of the grade level distribution in buildings.

There can be up to three members in a group. Each participant in a group must have their own individual set of protocols. Each one is registered individually. All their paper work must be bundled together as a group.

Official School Name: _____ District: _____

School Address: _____

City: _____ State: _____ ZIP: _____

Telephone: _____ FAX: _____

Teacher/Sponsor: _____

Teacher Home address: _____ Teacher Home phone: _____

Group	Name of each individual in the group.	Division	Title of Group Project
1.			
1.			
1.			
2.			
2.			
2.			

Total number of participants: _____

Entrance Fee for each individual in the group x \$ 15.00=

Total of Check: _____

MCSRC INDIVIDUAL REGISTRATION FORM

(One form should be filled out for each student participant)

Please print legibly or type the information requested.

Circle one: Division A (Grade 12) Division B (Grade 11) Division C (Grade 10) Division D (Grade 9) Division E (Grades 6-8)

Name: _____ Grade: ____ Age: _____

1. Student Email Address: _____ Sex: M__ F__

2. Home Address: _____

(Street, Box, Apartment, etc.)

City: _____ State: _____ ZIP: _____

3. Home Phone: _____ - _____ - _____

4. School Name: _____

5. School Address: _____

(Number, Street, Road, etc.)

City: _____ State: _____ ZIP: _____

6. School Phone: _____ - _____ - _____

7. Name of Teacher/Sponsor: _____

8. Teacher Email: _____

9. Project Title: _____

(Max. 80

spaces and

characters)

10. Project Categories: (Circle one)

Behavior & Social Science

Biochemistry

Botany

Chemistry

Computer Science

Earth & Space Science

Engineering

Environmental

Mathematics

Medicine & Health

Microbiology

Physics

Zoology

Consumer Science
(Middle School Only)

Check if team member _____

(Please read and complete the other side.)

11. Project Size: (Division "E" only 36"), (High School – 36" or 48") _____ inches
12. Are you a citizen of the United States? Yes No
13. Are you bringing a computer? Yes No
14. How many years have you participated in MCSRC? (Include this year.) _____
15. List the years participated: _____
16. May we have your permission to photograph you for publicity purposes during this event? Yes No Parent Signature: _____

Be sure that the proper certifications have been completed and attached for this project.
--Everyone completes the Sponsor Checklist 1, Forms 1A and 1B. Research dealing with humans needs an IRB form 4A & 4B and prior approval.
--Projects dealing with vertebrate animals, tissue, recombinant DNA, pathogenic agents or controlled substances need prior SRC approval and should check the current rules book for the proper forms.

ATTACH 1) THE COMPLETED REGISTRATION SHEETS(ON TOP) THEN 2) THE PRELIMINARY ABSTRACT, THEN 3) FORM 1, 1A &1B, THEN 4) ANY ADDITIONAL CERTIFICATION FORMS REQUIRED.