Fair: Clarifying the Form process

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Paperwork Deadline

Entry forms due from each school's science fair coordinator by Jan. 14th at Noon.

- 6 projects per MS and **8** projects per **HS**
- List alternates in case room permits.

All students that compete in the district fair must have a media release form on file either by the school office or the supervising teacher.

Entry forms on Curriculum and Instruction Site

Dates and Details

DCSS events at Murray Education Center

Project Set up times:

- Jan. 27th from 3:00-5:30PM or
- Jan. 28th from 7:30AM- 10:00AM

Project Judging:

- Jan. 28th from 1:00- until finished
- Jan. 28th -Student Interviews- 4:00-5:00

Awards Ceremony

- Jan. 30th – 6:30PM- 7:30PM

  1st and 2nd place winners meet afterwards-

  Region is at UWG - Feb. 7th

  STATE is at UGA- March (TBD)

Display and Safety

- Nothing that contains chemicals in vials
- No syringes, knives, or ammunition
- No mechanical devices that have pinch points
- No animals, or animal parts
- No glass
- No plants, dirt or rocks

Please Remember

Students:

- must have a logbook and display board
- must cite their research references
- **must bring all required forms completed to display in a notebook in front of project**********
- should cite the origin of all graphs and pictures (note if the student produced all of these, they can put a small card in front of the project that says: All graphs and photos prepared by me)
- **cannot** place QR codes or additional handouts in front of project.

Research notebooks and abstracts in addition to logbooks are highly recommended for projects that have aspirations of making it to State.

First 7 Steps for a successful project

1. Read your 2019-20 DCSS STEM Fair Handbook/Guidelines and your Time Table for project completion (*Found on Curriculum site*)

2. Choose a potential project and formulate a scientific or engineering/computer science question/hypothesis.

3. Fill out and turn in the 1 page ***Proposed Project form*** to your teacher. (*Found on the Curriculum & Instruction site*). She will determine if you project needs approval of the District SRC/IRB committee. **DO NOT** begin your experimentation until you are give approval from your teacher.

Students complete and give the teacher for approval

Mandatory Project Proposal Form- STEM Fair

Name of Teacher:_____ **School:**_____ **Date:**_____

Each team submits this form to his/her teacher before beginning the experiment. Please complete this form and give it to your teacher who will determine whether you can begin the project or whether your project needs to be reviewed by the SRC/IRB.

Student or team names:_____
Possible Project title:_____

Category (Circle one):
Science Investigation Engineering (Design/Invention) Computer Science (Design/Invention)

Give a 3-4 sentence explanation of your proposed project: _____
_____
_____
_____
_____
_____

Place a check under yes or no for each category. If you check yes to any of the categories, your project will need to be reviewed by the DCSS SRC/IRB Committee for safety. In that case, your teacher will scan and email your proposal to pamela.walker@dcssga.org She will submit it ot the SRC/IRC for further review. This process will take from 5-7 days and **YOU MUST WAIT FOR APPROVAL before you begin your experimentation.** For project that have all "NO" checks, the teacher can approve it directly and you can begin your experimentation.

YES	NO	
		Human subjects are involved (even if it is just asking them questions for a survey) and even if you experimenting on yourself only.
		Vertebrate animals- including pets and activities like fishing
		Animal tissue
		DNA or rRNA
		Radiation or chemicals not usually found in the home
		Controlled or hazardous substances
		Any microorganisms- (bacteria, viruses, fungi, etc)- this includes swabbing and growing bacteria in petri dishes and experimentation with bread mold
		Disease causing agents
		Explosives

Once your project is approved by teacher or the SRC/IRB:

4. One you are granted the go ahead from your teacher to proceed, complete forms **1, 1A, and 1B**. Part of **1A** is to develop a **research plan** on how you are going to carry out your experiment (**All dates on Form 1 and 1B must be prior to the Start date of experimentation, you enter on Line 7 of form 1A**). The next slide give you the location of the forms.

First 7 Steps for a successful project

NOTE: All projects MUST complete **Form 1, 1A (including the research plan), and 1B**.

5. Download the required form document. Direct access through live links are found here to all possible forms. You may type directly on the forms and print:
https://www.georgiacenter.uga.edu/sites/default/files/gsef-2019-required-forms-approvals.pdf

6. It is possible your project will require additional forms. To find out what other forms you may need, you should use the 60 second **Form wizard** to give you that information:
https://apps2.societyforscience.org/wizard/index.asp

7. There is an official rulebook that you will want to access to help answer questions as they relate to your project, i.e. if you are using human participants, pay special attention to the Human Consent form.
https://student.societyforscience.org/international-rules-pre-college-science-research

A very easy way to access individual forms is through the link below. It also gives you hints on how forms should be dated, etc.

https://www.georgiacenter.uga.edu/sites/default/files/gsef-2019-required-forms-approvals.pdf

Required Forms Access

Rule Book Access

Direct access to form wizard

Active links to all possible forms

All projects marked with a diamond symbol must be dated and signed before experimentation begins

2019 GEORGIA SCIENCE & ENGINEERING FAIR

Required Forms & Approvals Checklist

For ALL Grade 6-12 Scientific Research for Eligibility at Regional and State Fairs

Research forms must be reviewed and signed by local and Regional SRCs/IRBs as appropriate.

The following required forms and guidelines help students ensure that the research they are planning is safe, ethical, and approved by a parent, a teacher, and field experts. Students and mentors are strongly encouraged to use the Required Forms Wizard tool to help determine what forms are required for the project (https://apps2.societyforscience.org/wizard/index.asp).

To be eligible for GSEF, all projects must obtain proper approvals and follow the ISEF Rules & Guidelines.

https://student.societyforscience.org/international-rules-pre-college-science-research

It is the responsibility of the student and the Adult Sponsor to evaluate the study to determine if the research will require forms and/or approval prior to experimentation, especially projects using human participants, vertebrate animals, or potentially hazardous biological agents. Students are encouraged to consult with the local SRC/IRB to ensure they have followed all rules and completed all required forms.

Research forms must be reviewed and signed by local and Regional SRCs/IRBs as appropriate. Failure to adhere to the ISEF Rules and Guidelines may result in disqualification at any stage of the GSEF competition, including revocation of awards and honors.

Forms marked with a ◆ symbol must be signed and dated BEFORE experimentation begins.

Forms required for EVERY project:	
☐ GSEF Participation Agreement	(Required only for state fair [GSEF].) Required for every student.
☐ Official GSEF Abstract Form	(Required for state fair; regional or local fairs may have different Abstract requirements.) Official GSEF version is preferred, but 2019 ISEF Abstract Form (22 category) will also be accepted.
☐ 1 Checklist for Adult Sponsor	◆ The Adult Sponsor ensures that experimentation is within local, state, and Federal laws and Intel ISEF rules and that forms are completed by other adults (e.g. Qualified Scientist) as required.
☐ 1A Student Checklist Research Plan/Project Summary	See link for Research Plan/Project Summary instructions. The Research Plan is your first step. If changes are made during your research, they can be added to the original Research Plan as an addendum, recognizing that some changes may require returning to the SRC/IRB for appropriate review and approvals. If no additional approvals are required, the addendum serves as a Project Summary to explain the research that was conducted. If no changes are made from the original Research Plan, no Project Summary is required.
☐ 1B Approval Form	◆ One form per student. Signed and dated before experimentation begins and right after SRC has reviewed Forms 1, 1A, and any special forms. If project requires pre-approval, SRC signs either 2a or 2b before experimentation. Regional Fair SRC signs section 3 prior to that fair.
Additional forms required for specific types of research:	(Use Required Forms Wizard)
☐ 1C Regulated Research Institutional/Industrial Setting	Required if you conducted research at a ***college/university, medical facility, industrial setting,*** or ***other lab or research setting*** other than home, school or field.
☐ 2 Qualified Scientist	◆ Required if your research involves ***human participants, vertebrate animals, potentially hazardous biological agents,*** or ***DEA-controlled substances***.
☐ 3 Risk Assessment	◆ Required if your research involves ***hazardous chemicals, activities or devices,*** or ***DEA-controlled substances.*** Also required for some ***human participants*** projects. Recommended for all student-designed inventions or prototypes.
☐ 4 Human Participants	◆ Required if your research involves ***human participants***. Informed Consent Forms must be signed by research participants (see sample). IRB APPROVAL REQUIRED BEFORE EXPERIMENTATION.
☐ 5A/5B Vertebrate Animals	◆ Required if your research involves ***vertebrate animals***. 5A is for research conducted at home, school, or field; 5B is for research conducted at a regulated research institution. SRC/IACUC APPROVAL REQUIRED BEFORE EXPERIMENTATION.
☐ 6A Potentially Hazardous Biological Agents	◆ Required if your research involves ***microorganisms, rDNA, fresh/frozen tissue (including primary cell lines, human and other primate established cell lines and tissue cultures), blood, blood products,*** or ***body fluids***. SRC/IACUC/IBC APPROVAL REQUIRED BEFORE EXPERIMENTATION.
☐ 6B Human/Animal Tissue	◆ Required in addition to 6A if your research involves ***fresh/frozen tissue (including primary cell lines, human and other primate established cell lines and tissue cultures), blood, blood products,*** or ***body fluids***.
☐ 7 Continuation/Research Progression	Required if your project ***continues or expands upon a previous year's work***. Also must include Abstract and Research Plan for previous year.

Details on form completion

FORM 1A/Checklist

Students – Complete **Form 1A/Student Checklist** to the best of your knowledge. (Only 1 per project required) .

a. Pay special attention to question #5. You may need to come back to this question after filling out Form 1.

b. Prior approval by our SRC/IRB is required if humans, vertebrate animals, microorganisms, body fluids, tissue cultures, controlled substances or potentially hazardous biological agents are used in your project. (You learned this when you submitted your project proposal document)

c. Question #7 – make sure your experimentation start date occurs after the SRC/IRB approval date if required for your project.

d. Question #9 – Use complete addresses

e. Question #10- Complete a research plan

f. Question #11- Complete an abstract.

More About form 1A- The Research Plan

- Some students forget to do the research plan that goes with Form 1A. Specific directions are on page 2 of the document. **Once your proposal is approved, you should go ahead and do your research plan.**
- Details are given of what should be in the research plan at the end of Form 1A. It should be written **prior to experimentation** as to what **you will be doing.**
- See the next 2 slides for some examples.

Research plan

Many people in the Archery society debate constantly about which bow is more accurate and consistent; the Compound, Recurve, or Long bow. With my research and my hypothesis, that the Compound bow will be the most accurate and consistent, I hope to shed a light in the debate for the Compound Bow. I am using a professional Bowhunter that has used this varity of different bows in his hunting career.

To conduct my experiment, we will travel to Barr Lake in Brighton Colorado where we will use their Archery Range. We will be shooting at 10 and 20 yards with three identical, carbon arrows and the Compound, Recurve, and Long Bows. We will shoot for consistency by doing the same thing every time then measuring the distance between the farthest left and right arrow. We will also shoot for accuracy by aiming at the same point in the target every time then measuring the group for each bow. As always, safety first.....That is why we have the guidance of a Professional Bowhunter, a qualified archery range, and using common sense for safety.

My sources: Jim Titchenell, www.Bowhunters Paradise.com, www.Bowtecharchery.com, Colorado Bowhunters Association, Gamelines Archery club, Muzzy Archery

SRC/IRB Pre-Approval needed

Human participation - Form 4

Question: If we use the solvent extraction method with Decanoic acid in different ratios of water to simulated saltwater, will we able to desalinate water at an effective rate?

Ratios (Acid to water): 25:1 20:1 15:1 10: 5:1 1:1

Hypothesis: If we use the solvent extraction method with Decanoic Acid to remove salt from water, then we will find that the Decanoic acid at the 20:l and 15:1 ratios will work because those ratios are the closest to the original test.

Materials:

- 1 litre >98% Decanoic Acid
- 1 litre of distilled water
- 35g of table salt
- Hot plate with magnetic stirring capabilities
- 100mL Beaker
- 100mL Separation Funnel
- Electric Meter

No SRC/IRB Approval needed but would need a qualified scientist form

Procedures

- Mix 1L of water with 35g of salt. Stir until fully dissolved.
- Take 2mL of the solution and mix with 50 mL of Decanoic acid in the 100 mL beaker. Put onto a hot plate and heat to 70°C with continual stirring for 1 hour.
- After stirring is finished, turn the heat off and remove from hot plate. Let it cool and gravitationally separate. Using the glass pipet, carefully remove the transparent liquid from the solution.
- Add the liquid into a small graduated cylinder. Use the electric meter to record the electrical resistance of the liquid. Record Data.
- Repeat step 3-5 9 more times, then another 10 for each of the given ratios until the test stops to work. From that point, test each ratio 1 part of acid up until the ratio with the highest efficiency is found.
- Observe and record data.
- Make a conclusion based on data and observations.

Safety Precautions

Take great care with the Decanoic acid solutions because they are corrosive and hazardous. The Decanoic acid is flammable. Nitrile gloves will be worn and an experienced chemist will be over watching.

Hot plates provide a hazard because of their hot temperatures in this experiment for an extended period of time. Great care will be taken to avoid making direct contact with a hot plate and there will be an experienced supervisor over watching.

Bibliography

1 "Solvent Extraction" *Britannica School.* N.p., n.d., Web., 08 Oct 2014

2 Bajpayee Anurag, Tengei Luo, Andrew J. Muto, and Gang Chen. "Very Low Temperature Membrane Free Desalination by Directional Solvent Extraction." *Supplementary Material (ESI) for Energy & Environmental Science (2011)*: n. pag Printhttp://www.rsc.org/suppdata/ee/c1/c1ee01027a/c1ee01027a.pdf

3 "Capric Acid." *Wikipedia.* Wikimedia Foundation, 10 July 2014. Web. 08 Oct. 2014.

4 "Seawater." *Britannica School.* N.p., n.d. Web. 08 Oct. 2014.

5 "Taking the Salt out of Water with Oil." *Taking the Salt out of Water with Oil.* N.p., n.d, Web. 08 Oct. 2014 http://mpc- www.mit.edu/agenda/item/140-taking-the-salt-out-of-water-with-oil

Form Completion

APPROVAL FORM 1B

Students with their parents, will fill out **Approval Form 1B**, making sure to include all signatures that the project requires.

a. Please note: Question #1 **– Student & Parent signatures must be prior to the start of experimentation.**

b. Question 2 – If you have determined you need SRC/IRB approval, the signatures also need to be prior to experimentation.

c. Question 3 –Please leave blank.

Checklist for Adult Sponsor- Form 1

Your Adult Sponsor needs to complete **the Checklist for Adult Sponsor Form 1 and it must be signed prior to the start of experimentation**. They will do this using the answers from Form 1A and the student Research Plan.

Risk Assessment Form 3

All students in DCSS should complete the Risk Assessment Form 3. This is done by the student in collaboration with the person that will supervise

Required Paperwork

SRC/IRB prior Approval

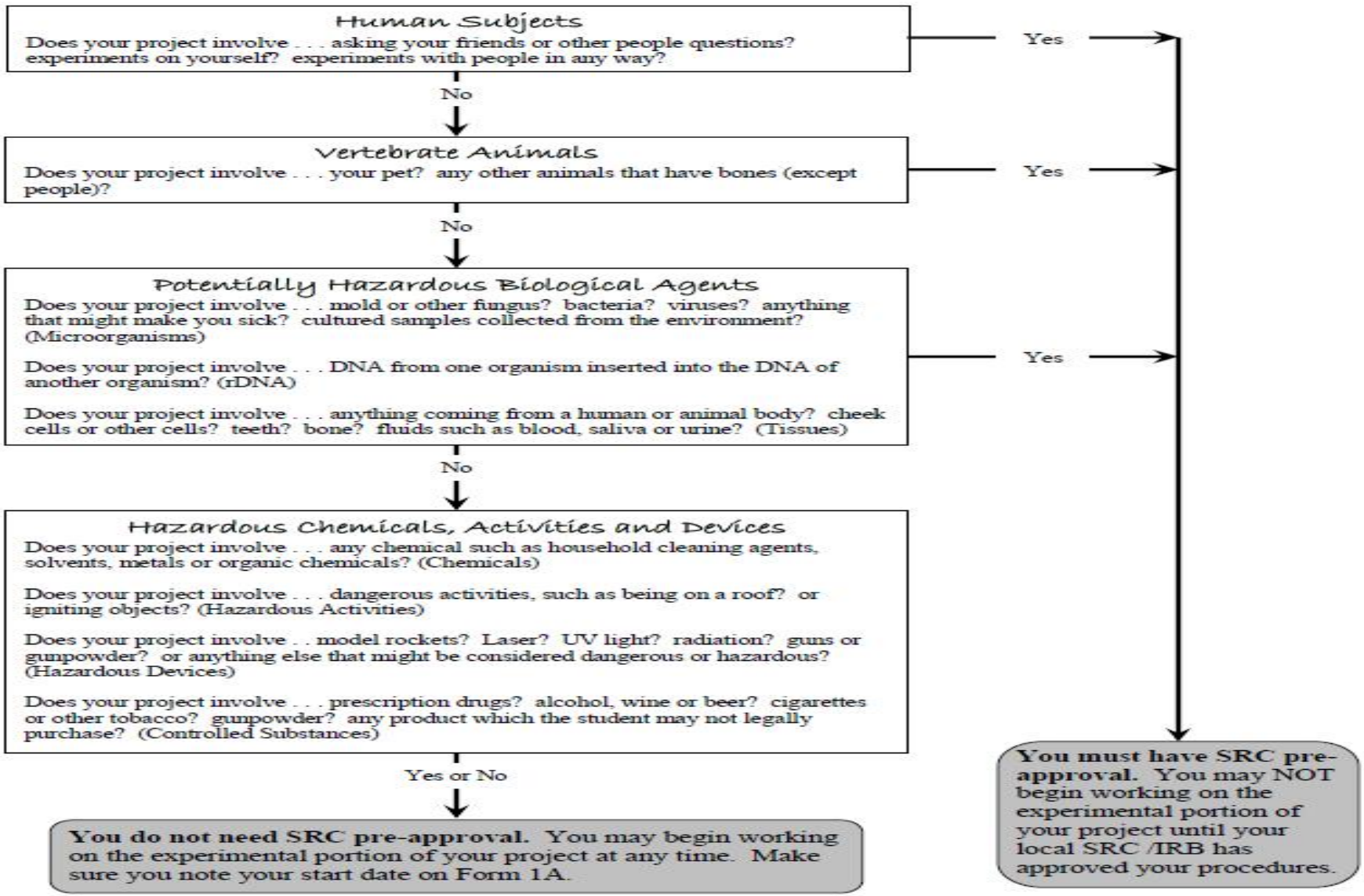
Once you submit your project proposal to your teacher, she/he will either approve it or will determine it requires SRC/IRB pre-approval BEFORE you begin your experimentation. The Rule Wizard, Project Proposal and the Flow Chart will indicate this.

If that is the case, DO NOT BEGIN YOUR EXPERIMENT YET!!!! Your teacher will scan your proposal and email pamela.walker@dcssga.org She will send the proposal to committee members and respond to you within 5-7 days if your project is acceptable or what adjustments need to be made to it. The committee members will provide the needed signatures where required.

(See the flow chart that follows to double check if your project needs SRC approval. It never hurts to double check)

Do I Need SRC Approval BEFORE I Can Begin My Project?

Some projects may fall under the rules of more than one category listed below.



Forms that apply to all projects advancing past District

- **Official Abstract Form** (complete after experimentation is complete)

http://www.georgiacenter.uga.edu/sites/default/files/gsef-2018-abstract.pdf

- **Checklist for Adult Sponsor (Form 1)** – 1 per project -Must be signed **BEFORE experimentation begins** (check dates/signatures)

http://www.georgiacenter.uga.edu/sites/default/files/gsef-2018-abstract.pdf

- **Student Checklist (Form 1 A). Step 10 requires that you complete a Research Plan/Project Summary and attach it to this form -*page 2 of the document gives* directions on how to write the research plan**

https://sspcdn.blob.core.windows.net/files/Documents/SEP/ISEF/2019/Forms/1A-Student-Checklist-Research-Plan-Instructions.pdf

- **Approval (Form 1B**) *completed by each student if a team* - **Must be signed BEFORE experimentation begins – also SRC/IRB approval (if required) BEFORE experimentation**

https://sspcdn.blob.core.windows.net/files/Documents/SEP/ISEF/2019/Forms/1B-Approval-Form.pdf

- **Risk Assessment (Form 3)- all DCSS projects must fill out one of these and it must be signed PRIOR to experimentation begins.**

https://sspcdn.blob.core.windows.net/files/Documents/SEP/ISEF/2019/Forms/3-Risk-Assessment.pdf

Form 3- Risk Assessment

<u>This form is Required for all projects in Douglas County</u>

Some Examples of hazards include:

- Prescription Drugs
- Alcohol and Tobacco
- Hazardous Chemicals (e.g., bleach, fertilizer, etc.)
- Hazardous Devices
  (e.g., power tools, knives, guns, arrows, etc.)
- Hazardous Activities
  (e.g., cutting, sawing, cooking, ladders, etc.)
- Radiation

Some projects may need these Additional Forms

Form 2- Qualified Scientist

- Should have a professional degree related to student research **Or** Have applicable experience and expertise with review and approval by the SRC
- May be required if your research involves ***human participants, vertebrate animals, potentially hazardous biological agents,*** or ***DEA-controlled substances***.
- Must be completed and signed before the start of the experiment.
- A designated supervisor can provide direct supervision in some cases.

Form access:
https://sspcdn.blob.core.windows.net/files/Documents/SEP/ISEF/2019/Forms/2-Qualified-Scientist.pdf

Human Participants Research

- The **district IRB** must review and approve the research plan **before** experimentation begins
- Research participants 18 years of age or older must give **informed consent**
- Research participants under 18 must give **assent** and their parents may be required to give **written permission**
- **Form 4 required even if the student is the only subject of the research as well as if the participants are only giving feedback on a prototype.**

https://sspcdn.blob.core.windows.net/files/Documents/SEP/ISEF/2019/Forms/4-Human-Participants.pdf

- **The IRB decisions are documented and signed on Form 4: Human Participants and Informed Consent Form.**

If IRB determines that written informed consent/assent or parental permission is required, documentation is obtained on an "informed consent" document-
see the sample one given

Human Informed Consent Form

Instructions to the Student Researcher(s): An informed consent/assent/permission form should be developed in consultation with the Adult Sponsor, Designated Supervisor or Qualified Scientist.
This form is used to provide information to the research participant (or parent/guardian) and to document written informed consent, minor assent, and/or parental permission.

- When written documentation is required, the researcher keeps the original, signed form.
- Students may use this sample form or may copy ALL elements of it into a new document.

If the form is serving to document parental permission, a copy of any survey or questionnaire must be attached.

Student Researcher(s): _____

Title of Project: _____

I am asking for your voluntary participation in my science fair project. Please read the following information about the project. If you would like to participate, please sign in the appropriate area below.

Purpose of the project:

If you participate, you will be asked to:

Time required for participation:

Potential Risks of Study:

Benefits:

How confidentiality will be maintained:

If you have any questions about this study, feel free to contact:

Adult Sponsor/QS/DS: _____ Phone/email: _____

Voluntary Participation:
Participation in this study is completely voluntary. If you decide not to participate there will not be any negative consequences. Please be aware that if you decide to participate, you may stop participating at any time and you may decide not to answer any specific question.

By signing this form I am attesting that I have read and understand the information above and I freely give my consent/assent to participate or permission for my child to participate.

Adult Informed Consent or Minor Assent Date Reviewed & Signed: _____

_____ _____

Research Participant Printed Name: Signature:

Parental/Guardian Permission (if applicable) Date Reviewed & Signed: _____

_____ _____

Parent/Guardian Printed Name: Signature:

https://sspcdn.blob.core.windows.net/files/Documents/SEP/ISEF/2019/Forms/4-Sample-Informed-Consent.pdf

Vertebrate Animals

Vertebrate Animal Forms

Required if your research involves ***vertebrate animals***.

- 5A is for research conducted at home, school, or field. This requires SRC approval before the EXPERIMENTATION!
- 5B is for research conducted at a regulated research institution. (must have the Institutions' IACUC/SRC approval BEFORE EXPERIMENTATION!)

https://sspcdn.blob.core.windows.net/files/Documents/SEP/ISEF/2019/Forms/5AB-Vertebrate-Animal.pdf

Potentially Hazardous Biological Agents

6A: Potentially Hazardous Biological Agents

Required if your research involves:

- ***microorganisms,***
- ***rDNA,***
- ***fresh/frozen tissue (including primary cell lines,***
- ***human and other primate established cell lines and tissue cultures),***
- ***blood,***
- ***blood products,*** or
- ***body fluids***.

SRC/IACUC/IBC APPROVAL REQUIRED BEFORE EXPERIMENTATION!

Must be signed and dated before the experiment begins!

https://sspcdn.blob.core.windows.net/files/Documents/SEP/ISEF/2019/Forms/6A-Potentially-Hazardous-Biological-Agents.pdf

6B: Human/Animal Tissue

Required in addition to 6A if your research involves:

- ***fresh/frozen tissue (including primary cell lines, human and other primate established cell lines and tissue cultures),***
- ***blood,***
- ***blood products,*** or
- ***body fluids***.

https://sspcdn.blob.core.windows.net/files/Documents/SEP/ISEF/2019/Forms/6B-Human-Vertebrate-Animal-Tissue.pdf

Must be signed and dated before the experiment begins!

Form 1C Regulated Research Setting

Required if you conducted research at a:

- ***college/university,***
- ***medical facility,***
- ***industrial setting,***
- ***other lab or research setting*** other than home, school or field.

This form is completed AFTER experimentation by the adult supervising the student.

https://sspcdn.blob.core.windows.net/files/Documents/SEP/ISEF/2019/Forms/1C-Regulated-Research-Institution.pdf

Forms done- now what?

All students that have projects that advance to the Douglas County District science and engineering fair must bring all completed *(signed and properly dated) forms with them when projects are checked in. Failure to do this can hurt your chances of advancing to region or state competition)*

Students should place the forms in a notebook that will be placed in front of the project.

It is also a good idea to include an abstract and put it in a clear plastic stand in front of the project.

Questions??