

## New York City Science & Engineering Fair

### What's New for NYCSEF 2019!

**New Categories:** *The categories of Mathematics and Computer Science have been combined to form the new category of Math & Computer Science with a category code of MC.*

**Vertebrate Animals:** *Refer to pg.13 Rule 6 of the NYCSEF Guidelines – 15% is the maximum permissible weight loss for experimental animals compared to control group.*

**Human Participants:** *NYCSEF RULE: For incomplete or invalid Human Participants Forms students will be required to submit a letter from each person associated with the project's IRB, stating that they have reviewed the project.*

**Engineering Projects:** *An engineering projects Guide has been included in the Guidelines, refer to page 21.*

**Research Plan:** *Students **MUST** be very clear about what role they played in the project. For example:*

*What experiments/protocols did the student do?*

*What experiments/protocols did the mentor or supervisor do?*



*You will not have an indefinite amount of time to complete the online application once you've started it!- Upon registration and beginning to fill out the NYCSEF online application in FORMSTACKS, students must complete the online form exactly 30 days after beginning. The online form system will only save the incomplete application for that amount of time before it closes permanently to edits (even if it is not complete and submitted).*



*"TEST" applications that are not real projects (to see what the online form experience is like), are acceptable, but the NYCSEF team urges students to include the word TEST in the FIRST NAME and in the PROJECT TITLE for our record keeping accuracy and efficiency.*

*What aspects of the project were the students' own ideas?*

*What aspects of the project were developed by the student?*



### General Overview: NYCSEF Application

Print out the PDF of the NYCSEF application (available at: <http://www2.cuny.edu/academics/school-college-partnerships/nycsef/>). You will need forms found in this document that require written signatures.

Start the online application (and complete it in 30 days)

When all sections are complete, **PRINT OUT** the confirmation pages for each section that is sent to your provided email (These confirmations pages will be part of the hard copy application that is mailed to the NYCSEF office).



*\*Student Information and Project Information are **EXTREMELY IMPORTANT** aspects of the application and **MUST** be filled out completely in order to have the application be accepted and reviewed. Applications that arrive without Project Information automatically **FAIL TO QUALIFY** and will not be reviewed.*



The ONLINE application requires you to complete a series of sections:

**Student Information**

**Project Information**

**For ALL PROJECTS – Students must submit:**

- 1) ONE (1) printout of the NYCSEF online application: including online application confirmation emails of Student Information, Project Information, and Additional Information
- 2) ONE (1) set of the signed NYCSEF supplemental forms (as applicable)

**For TEAM Projects –Students MUST submit:**

All the items mentioned in the ALL projects section with the addition of:

Student information for each team member must be submitted ONLINE

A team will submit one (1) application. However, that application must include one Approval Form (1B) for each student.

A maximum of 3 students can be on a team

A least one member **MUST** be a student attending a school in New York City (the Team Leader)

**FORMS:** There are some forms that are required for **EVERY PROJECT**, while other are specific to certain types of projects. See below for more details:

**REQUIRED FOR EVERY PROJECT:**

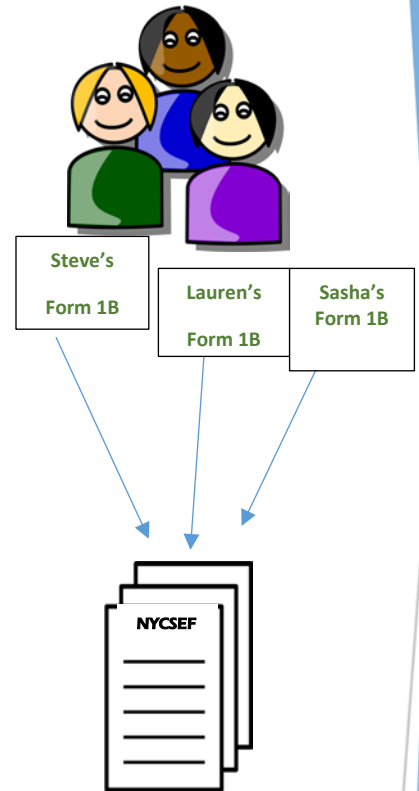
- 1. **NYSCEF Signature Page:** Acknowledgment of Participation from student, parent/guardian, teacher, and principal. **BLUE** or **BLACK** ink only. No pencil.



*Did you know?*

*A team can include up to 2 students that are not attending a High School in NYC! (At least 1 of the 3 members must be attending a school in NYC)*

*Team Maniac Molecules!  
(3 members max)*



*Each Team submits one (1) NYCSEF Application, with Form 1B's for each team member*

**AND**

*Student Information for each team member*

- If you are a team, all members must complete the signature page accompanying the project, along with their parent/guardian, sign it, and date it.
- Science teacher **MUST** sign and date
- Principal **MUST** sign and date

2. **Team Information (WHEN APPLICABLE):** Template for team member information. **MUST BE COMPLETED ONLINE.**

3. **Checklist for Adult Sponsor (1)** - To be completed by the Adult Sponsor in collaboration with the student researcher. The adult sponsor is your science instructor, or a teacher who can serve as a contact for the NYCSEF staff. This person can also be the person who is helping to supervise the project.

- **MUST** check appropriate boxes, **PRINT** their name, **SIGN** and **DATE** the document as well as include contact information.

4. **Student Checklist (1A):** Basic student checklist that **MUST** be completed in full.

- What's a CONTINUATION PROJECT? (*Refer to page 2 of the Guidelines*) Any project based on the student's prior research could be considered a continuation project including a progression of work within the same field of study. **Students will be judged only on the most recent year's research.** The project year includes data collection and experimentation conducted over a maximum of 12 continuous months from January 2018 – May 2019.



*\*Repetition of previous experimentation with the same methodology and research question with an increase in sample size and/or changes in concentrations are examples of unacceptable continuation projects.*

These types of projects require completion of FORM 7: Continuation/Research Progression Projects.

**5. Project Summary Parts 1-4: MUST BE COMPLETED ONLINE**, (Refer to page 33 in the *Guidelines for more details*) The project summary is a succinct, but detailed explanation of the rationale, research question(s), methodology, and risk assessment of your research project and should be completed after experimental research.

- Be sure to specifically and explicitly explain what aspects of the rationale, methodology, and analysis were completed/contributed by the student.



*Remember to be **VERY** specific in your research plan about what **YOU** did, as the student researcher versus what your **MENTOR** did.*

**6. Official Project Abstract:** To be completed **AFTER** experimentation. 250 word maximum (1 page). **MUST BE COMPLETED ONLINE.**

**7. Approval Form (1B)** – Basic approval required for each student, including each member of teams\*

- **Section 2: DO NOT FILL OUT, NYCSEF Staff use ONLY.** It will only be used if the project advances to the International level of the fair.
- **Section 3: DO NOT FILL OUT, NYCSEF staff use ONLY.**

## SUPPLEMENTAL FORMS FOR PROJECTS:

These forms may or may not be applicable to your project based on your methods of experimentation, location research was done etc. The top of each form contains a brief description of circumstances under which it is needed. For further questions contact NYCSEF staff at [nycsef@cuny.edu](mailto:nycsef@cuny.edu).

**1. Regulated Research Institutional (RRI)/Industrial Setting Form (1C)** – Required for any research conducted at a regulated research institution or work site other than home, field, or school.

- **The Signature must be dated AFTER experimentation.**

**2. Qualified Scientist Form (2)**

- Required for research involving human participants, vertebrate animals, potentially hazardous biological agents, hazardous substances and devices. The qualified scientist should be the person you work closest with in the laboratory, and who has training /experience in your field of research. Please refer to page 6 of the NYCSEF: Rules and Guidelines document for additional info.

- Please note that if you checked YES to any part of question 2 of the Qualified Scientist Form, the related additional SUPPLEMENTAL form must be submitted (i.e. Human Participants Form (4) or Vertebrate Animals Form (5B), etc.)



***\*What are some examples of an RRI?** Answer: A research hospital (like NYU Langone Medical Center or Mount Sinai), a university (like CUNY Hunter College or Columbia), a research institute (like the Child Mind Institute)*

- *This form is ONLY to be filled out if the student's project was done at a Regulated Research Institution. The person filling this form out is the student's research mentor, a post-doctorate associate/graduate student/laboratory manager working with and supervising the students work in the lab.*

- *This form should be submitted JOINTLY with a copy of your institutions' IRB/IACUC/IBC, if applicable.*

### 3. Risk Assessment Form (3)

- The NYCSEF Scientific Review Committee (SRC) encourages students to complete this form even if there a small doubt about the chemicals, compounds, procedures, devices or microorganisms being used. Understanding the risks and taking appropriate measures to ameliorate them are the primary goal for this form.
- Required for projects using hazardous chemicals, activities, or devices and microorganisms exempt from pre-approval. To be completed BEFORE experimentation. *Review page 20 of NYCSEF Guidelines.*
- In the event that compounds being used are proprietary or subject to copyright issues, identification of the **CHARACTERISTICS** (i.e. corrosive-ness, acidity, etc.) of the compound can be reported on the Risk Assessment form.



***Should the entire IRB/IACUC document be submitted?***

*ANSWER: No. An IRB approval letter or applicable portion of the IRB document can be submitted. The function of submitting this document is to show that the experimentation protocol for that laboratory has been approved at the RRI.*

### 4. Human Participant Form (4)

- 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 recruitment or data collection.
- As of the most current NYCSEF Guidelines, incomplete or invalid Human Participants Forms will require students to submit a letter from each person associated with the project's IRB, stating that they have reviewed the project.



- As of the most current NYCSEF Guidelines, human participants involved in student designed inventions, prototypes, computer applications and engineering design projects MUST review and adhere to the rules and guidelines as detailed on page 9.

### **5. Vertebrate Animal Form (5A)**

- Required for all research involving vertebrate animals that is conducted in school/home/ field research site. (*SRC approval required before experimentation*).
- Review the rules and guidelines for use of vertebrate animals in the Guidelines page 11-13.

### **6. Vertebrate Animal Form (5B)**

- Required for all research involving vertebrate animals that is conducted in a Regulated Research Institution. (IACUC approval required before experimentation. Form must be completed and signed after experimentation.). Review pages 11-13 of NYCSEF Guidelines.
- Review the Guidelines for use of vertebrate animals in the Guidelines page 11-13.
- Vertebrate animals update as of 2018-2019 NYCSEF Guidelines – 15% is maximum permissible weight loss for experimental animals compared to control group.
- Prohibited vertebrate animal studies are as follows: vertebrate studies that culminate in or are designed with experimental procedures that result in death;

induced toxicity studies of any kind that cause pain, distress or death; vertebrate studies that use aversive stimuli such as shock, mother/infant separation or learned (induced) helplessness studies; predator/prey experimental design.

### **7. Potentially Hazardous Biological Agents Assessment Form (6A)**

- 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 before experimentation. Review pages 14-17 of NYCSEF Guidelines.

### **8. Human and Vertebrate Animal Tissue Form (6B)**

- 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.

### **9. Continuation/Research Progression Projects Form (7)**

- 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/Project Summary.

- Students will be judged only on the most recent year's research. The project year includes data collection and experimentation conducted over a maximum of 12 continuous months from January 2018 – May 2019.
- Repetition of previous experimentation with the same methodology and research question with an increase in sample size and/or changes in concentrations are examples of unacceptable continuation projects.

**For Questions Contact the NYCSEF**

**Team at:**

nycsef@cuny.edu

**Research Paper: 2 copies of the paper should be submitted as a printed out hard copy with the mailed in NYCSEF application.**

- Abstract
- Introduction
- Materials and Methods
- Results
- Discussion and Conclusions
- References/Literature Cited (must include at least five major scientific/academic references)

