❖ Roles and Responsibilities of Students & Adults ❖

The Roles and Responsibilities described below are relevant to all NYCSEF events and may differ from those used by Intel ISEF. Specific roles and responsibilities for individuals involved in the Intel ISEF can be found at <societyforscience.org/isef/document/index.asp>.

The Student Researcher(s)

The student researcher is responsible for all aspects of the research project including enlisting any needed supervisory adults (Adult Sponsor, Sponsoring Science/Research Teacher, Qualified Scientist, etc.), obtaining necessary approvals (SRC, IRB, etc.), following the Rules and Guidelines for NYCSEF, and doing the experimentation, engineering, data analysis, etc. involved in the project.

The student must be in enrolled in a NYC public, private, or parochial school in grades 9 – 12 or equivalent and must not have reached the age of 21 by May of the event year. Students may compete as a team of up to 3 members, and can be enrolled in different schools, as long as the schools are ALL located within NYC.

Scientific fraud and misconduct are not condoned at any level of research or competition. Such practices include plagiarism, forgery, use or presentation of other researcher's work as one's own and fabrication of data. Fraudulent projects will fail to qualify for this and future NYCSEF competitions.

The Sponsoring Science/Research Teacher (for NYCSEF only)

The Sponsoring Science / Research Teacher is responsible for overseeing the student(s) participation in all aspects of the research project, from the planning phase through the competition phase. The Sponsoring Science/Research Teacher must be an adult or instructor from the applicant's school. **The Sponsoring Science / Research Teacher is required to review all paperwork submitted to NYCSEF by his/her student(s) and sign the Student Information form (see page 29a) acknowledging that he/she reviewed the submitted project application.** Information concerning student's application status will also be communicated to the Sponsoring Science/Research Teacher.

For Team Projects, the science / research teacher of the Team Leader will be designated the Sponsoring Science / Research Teacher and will be the primary point of communication between NYCSEF staff and all student members of the research team.

The Adult Sponsor

An Adult Sponsor may be a teacher, parent, university professor, or scientist in whose lab the student is working. This individual must have a solid background in science and should have close contact with the student during the course of the project. The Adult Sponsor is responsible for ensuring the student's research is eligible for entry in this competition.

The Adult Sponsor is responsible for working with the student to evaluate any possible risks involved in order to ensure the health and safety of the student conducting the research and the humans or animals involved in the study. The Adult sponsor must review the student's **Student Checklist (1A)** and **Research Plan** to make sure that: a) experimentation is done within local state, and federal laws and the NYCSEF rules and guidelines; b) that forms are completed by other adults involved in approving or supervising any part of the experiment; and c) that criteria for the Qualified Scientist adhere to those set forth below.

The Adult Sponsor must be familiar with the regulations that govern potentially dangerous research as they apply to a specific student project. These may include chemical and equipment usage, experimental techniques, research involving human or vertebrate animals, and cell cultures, microorganisms, or animal tissues. The issues must be discussed with the student when completing the **Research Plan**. Some experiments involve procedures pr materials that are regulated by state and federal laws or may not be appropriate for pre-college students. If not thoroughly familiar with the regulations, the Adult Sponsor should help the student enlist the aid of a Qualified Scientist.

The Qualified Scientist

A Qualified Scientist should possess an earned doctoral / professional degree in the area that directly relates to the student's area of research. However, a master's degree with equivalent experience and/or expertise in the student's area of research is acceptable when approved by a Scientific Review Committee (SRC). The Qualified Scientist must be thoroughly familiar with the local, state, and federal regulations that govern the student's area of research.

A student may work with a Qualified Scientist in another city or state. In this case, the student must work locally with a Designated Supervisor who has been trained in the techniques the student will use.

Note: The Qualified Scientist, Adult Sponsor, and Sponsoring Science / Research Teacher may be the same person, IF that person is qualified as outlined above.

The Designated Supervisor

The Designated Supervisor is an adult who is directly responsible for overseeing student experimentation. The Designated Supervisor need not have an advanced degree, but should be thoroughly familiar with the student's project, and must be trained in the student's area of research. The Adult Sponsor or the Sponsoring Science / Research Teacher may act as the Designated Supervisor

provided that he/she directly oversees student experimentation.

If a student is experimenting with live vertebrate animals and is in a situation where the animals' behavior or habitat is influenced by humans, the Designated Supervisor must be knowledgeable about the humane care and handling of the animals.

The Institutional Review Board (IRB)

An Institutional Review Board (IRB) is a committee that according to federal regulations (45-CFR-46), must evaluate the potential physical and/or psychological risk of research involving human subjects. All proposed human research must be reviewed and approved by an IRB before experimentation begins. This includes any surveys or questionnaires to be used in a project.

Federal regulations require local community involvement, therefore an IRB should be established at the school level to evaluate human research projects. An IRB at the school or student experimentation level must consist of a minimum of three members. **In order to eliminate conflict of interest, the Sponsoring Science / Research Teacher, Adult Sponsor, parents, Qualified Scientist, and/or the Designated Supervisor who oversee a specific project must not serve on the IRB reviewing that project.** Additional members are recommended to help avoid this conflict of interest and to increase the expertise of the committee. This IRB must include:

a) a science educator
b) a school administrator (preferably a principal or assistant principal),
c) and one of the following who is knowledgeable and capable of evaluating the psychological risk involved in a given study: a medical doctor, physician's assistant, registered nurse, a psychiatrist, psychologist, or licensed social worker.

If the IRB needs an expert as one of its members and one is not in the immediate area, then documented contact with an external expert is appropriate and encouraged. A copy of the correspondence (i.e. email, fax, etc.) should be attached to Form 4 and can be used as the signature of that expert.

IRB's exist at federally regulated institutions (i.e. universities, medical centers, NIH, corrections facilities). Prisoner advocates must be included on the IRB when research subjects are at a correctional facility. The institutional IRB must initially review and approve all proposed research conducted at or sponsored by that institution. The Adult Sponsor and the Sponsoring Science / Research Teacher are responsible for ensuring that the project is appropriate for a pre-college student and adhere to all the NYCSEF, ISEF, local, and federal rules.

An IRB generally makes the final determination of risk. However, in reviewing projects just prior to a fair, if the NYCSEF SRC judges a local IRB's decision as inappropriate, thereby placing human subjects in jeopardy, the SRC may override the IRB's decision and the project may fail to qualify for competition.

The NYCSEF Scientific Review Committee (SRC)

A Scientific Review Committee (SRC) is a group of qualified individuals that is responsible for evaluation of student research, certifications, research plans, and exhibits for compliance with the rules and pertinent laws and regulations. Local SRCs must review and approve all projects before experimentation begins.

Any proposed research involving vertebrates and potentially hazardous biological agents must be reviewed and approved BEFORE experimentation. Human studies reviewed and approved by a properly constituted IRB do not have to be reviewed by a SRC until prior to competition. ALL projects must be reviewed and approved by the NYCSEF SRC for compliance with competition rules and deemed eligible for competition in NYCSEF.

An SRC must consist of a minimum of three persons. The SRC must include:

a) a biomedical scientist (Ph.D, M.D., D.V.M., D.D.S., or D.O)
b) a science educator
c) at least one other member with expertise in the area of student research

In order to eliminate conflict of interest, the Sponsoring Science / Research Teacher, Adult Sponsor, parents, Qualified Scientist, and/or the Designated Supervisor who oversee a specific project must not serve on the SRC reviewing that project. Many projects will require additional expertise to properly evaluate (or instance, extended knowledge of biosafety or of human risk groups.) If animal research is involved, at least one member must be familiar with proper animal care procedures.

Other Review Committees

Certain areas of research conducted in a regulated research institution require review and approval by federally mandated committees that have been established at that institution. These committees are:

a) Institutional Animal Use and Care Committee (IACUC)
b) Institutional Review Board (IRB)
c) Institutional Biosafety Committee (IBC)
d) Embryonic Stem Cell Research Oversight Committee (ESCRO)

It is important that students retain ALL original signed NYCSEF application forms. Only copies of the student application materials should be submitted. ALL application materials must be received by 5PM on Wednesday, January 7, 2009.