SUMMARY of RULES for 2023 GREATER K.C. SCIENCE & ENGINEERING FAIR

GRADES 9 THROUGH 12

Required forms and detailed information available at https://sciencecitygkcsef.stemwizard.com, based on those published by the Intel International Science and Engineering Fair (ISEF). Projects in the Greater Kansas City Science and Engineering Fair must follow these rules in order to be eligible for international competition.

Every high school project requires these forms (completed/ signed prior to experimentation):

Form 1: Checklist for Adult Sponsor – must be signed and dated **PRIOR** to starting experimentation.
Form 1A: Student Checklist – **start date** must be **AFTER** all signatures and before experiment begins.
NOTE: For projects requiring prior approval, suggest leaving the start date blank until approved.
Form 1B: Approval Form (complete only Section 1, Parts a, b) – see below for prior approval info.
Research Plan or Outline – instructions on required content and format are appended to Form 1A.

Human Participants require IRB approval before experimentation starts. The **IRB** (Institutional Review Board) is three people: medical/ mental health professional, educator (not the student's teacher), and a school administrator. Schools that do not have an appropriate medical or mental health professional (psychologist, psychiatrist, medical/osteopathic doctor, licensed social worker, licensed clinical professional counselor, physician's assistant, doctor of pharmacy, or registered nurse) can contact the science fair office for assistance in fulfilling that role to review their projects. Any individual that is an Adult Sponsor (teacher), Designated Supervisor, Qualified Scientist, or is related (biologically or legally) to the student researcher in any way cannot serve on the IRB for that student's project.

The student researcher must write a research plan and answer the first four questions on the Human Participants Form 4. ISEF rules and/or the online Risk Assessment Guide can help determine the degree of risk for a project and if a consent form will be required. A sample Informed Consent Form with all required elements of a proper consent appends Human Participants Form 4. If the student researcher wants to show photos of any individual on their display board, it is necessary to obtain separate written permission from each participant, not including the student researcher. The completed Human Participants form with the research plan (and consent form if required) must be approved by the IRB before any experimentation can begin.

All human signed consent forms (including photograph/video release) must accompany the Fair Application OR be delivered when the project display is set up. If publicly available data is used (with no personal interactions) or behavioral observations are made in an unrestricted public setting with no interaction by the researcher (and no collection of personal data), it is not considered a human participants project. If a student researcher and/or their IRB are unsure whether a waiver of written informed consent is appropriate, it is best to prepare a consent form rather than risk being disqualified from the fair. More detailed information is online.

***Prior Approval* by the Science Fair SRC (Scientific Review Committee) is required for the following two general types of high school projects** (see SRC approval process on page two)**:**

1) Vertebrate (non-human) animals of any species require Form 5A or 5B and students may not personally perform any invasive techniques including euthanasia. Students must look for alternatives to the use of vertebrates and are prohibited from projects that cause or may potentially cause pain, suffering or death. A veterinarian must be consulted if the project includes prescription drugs and/or nutritional supplements. Research conducted at a licensed research institution requires separate forms (see next page, Form 5B).

2) Potentially Hazardous Biological Agents (bacteria, viruses, prions, rickettsia, fungi, mold, parasites, rDNA, fresh/frozen tissue, primary cell cultures, blood, blood products, or body fluids) require Potentially Hazardous Biological Agents Risk Assessment Form 6A and direct supervision by a Qualified Scientist or Designated Supervisor (Form 2). Biosafety Level descriptions (BSL-1 and -2) online identify appropriate precautions; research requiring BSL-3 or 4 precautions is prohibited. Human or vertebrate tissues (including blood) require

Form 6B. Baker's or brewer's yeast and E. coli K-12 (grown at school) are exempt and do not require prior approval. All signatures on Forms 6A and 6B must be **PRIOR** to experimentation (i.e. before the start date).

Microorganisms may be purchased or cultured/collected from any environment but must be grown only at school or an appropriate research laboratory with supervision and appropriate disposal methods (i.e. appropriate biosafety level or BSL containment). Students can only work with MRSA (methicillin-resistant *Staphylococcus aureus*), VRE (vancomycin-resistant enterococci) or KPC (*Klebsiella pneumoniae*) in a BSL-2 laboratory at a Registered Research Institution with documented Institutional Biosafety Committee (IBC) review and approval and under the direct supervision of a Qualified Scientist. Studies intended to genetically engineer or culture bacteria with antibiotic resistance are prohibited. Genome editing must be done at a research institution in a BSL-2 lab under appropriate supervision. Proper disposal, such as autoclaving, bleach, or incineration, is required for all potentially hazardous biological agents.

***To obtain SRC Prior Approval** (required before experimental work begins), complete all required forms and send to the the **Scientific Review Committee (SRC) via e-mail** at FairSRC@unionstation.org. Response by the SRC Chair is usually returned (if proper contact info is provided) within 72 hours during the school year.

ADDITIONAL FORMS required for some High School projects.
Form 2: Qualified Scientist Form must be signed (**PRIOR** to experimentation) for all projects involving human participants, vertebrate animals, potentially hazardous biological agents, and DEA-controlled substances. This person must have a professional degree and/or appropriate expertise in the student's area of research and may be the Adult Sponsor (with appropriate qualifications) and/or the Designated Supervisor (see form 3).

Form 3: Risk Assessment Form required for projects using hazardous chemicals, activities or devices. It must be signed (**PRIOR** to experimentation) by a Qualified Scientist or Designated Supervisor, who will directly supervise the student if the Qualified Scientist is unable to do so. Projects with DEA-controlled substances, prescription drugs, alcohol, tobacco, firearms or explosives MUST also follow all federal and state regulations.

Form 5B: Vertebrate Animal Form for animal projects conducted at a regulated research institution. The IACUC (Institutional Animal Care and Use Committee) of the research institution must review and approve these projects **PRIOR** to experimentation and that paperwork submitted to the SRC for review.

Form 1C: Regulated Research Institutional/Industrial Setting Form is for students that complete their project at an institution other than their school. The Qualified Scientist (employee of that institution) must complete and sign Form 1C **AFTER** the project is finished. This form is not required to accompany the Fair Application but should be brought when the project display is set up at the fair.

Form 7: Continuation Projects Form is required for any project that is a continuation of a previous science fair project. Repetitions of a previous experiment with the exact same methodology or simply increasing the sample size are examples of unacceptable continuation projects. Contact the SRC with any questions.

Demonstration projects (i.e., with known outcomes) and opinion surveys are not accepted for the fair. Product testing (other than for inventions) is not allowed for high school projects. Project displays cannot include microorganisms or any living organisms; photos are preferred for these projects. Photos of vertebrate animals involved in lab procedures of any sort are prohibited. Full face photos of students and human participants (with signed consent forms) are acceptable and student researcher names may be on project displays. Sources of all photos (i.e., a credit line of origin) must be present in the project display; if all photos are from one source or a single photographer, one global credit line is acceptable.

ISEF Rules Wizard at https://ruleswizard.societyforscience.org/ can help determine what forms and approvals are necessary before beginning a science fair project. If unsure whether a project requires prior approval, submit for SRC review rather than risk being disqualified from the fair. Questions are welcome at any time.