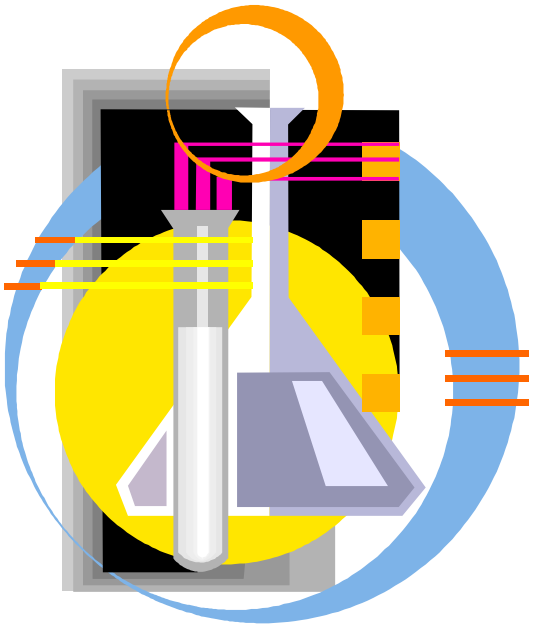
Rio Grande Valley Regional Science and Engineering Fair

Sponsored by

The University of Texas at Brownsville and Texas Southmost College

Science Fair 2005: Exploring Genius in the Valley

March 5, 2005



Timeline

Rules

Required ISEF Safety Forms are available on the web at

www.sciserv.org/isef/

Science Fair 2005: Exploring Genius in the Valley

Table of Contents

Greetings from the President

The University of Texas at Brownsville and Texas Southmost College

Dear Superintendents, Principals, Teachers, Sponsors and Students:

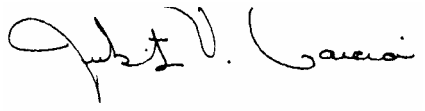
On behalf of the faculty and staff at The University of Texas at Brownsville and Texas Southmost College, we are pleased to host the 2005 Rio Grande Valley Regional Science and Engineering Fair on our campus.

To prepare a venue for your students to showcase their understanding of the principles of science in its many forms is an honor for us. During the 2002, 2003 and 2005 competitions, which were held at UTB/TSC, the judges were quite impressed with the breadth of knowledge and talent of the students at each grade level. Staff members throughout the campus will work to offer activities that will help the students learn about the important issues that come with preparing for college.

The 21st Century comes with many challenges for educators. One of those challenges is keeping students engaged in their studies, particularly in science and research. Along with your motivational and educational efforts, we want to contribute to the goal of encouraging students to maintain their natural curiosity and build their knowledge in science. The students' achievements in science definitely matter to the long-term success of the Rio Grande Valley.

We look forward to working with the Director of the Rio Grande Valley Regional Science and Engineering Fair and with each of you to make this a great experience for students, teachers, and sponsors.

Sincerely,



Juliet V. García

Introduction

The Rio Grande Valley Regional Science Fair is an annual science event that encourages students to investigate and solve problems about their world. The Rio Grande Valley Regional Science Fair would not be possible without the support and hard work of local fair directors, teachers, scientists and adult volunteers. We salute all those individuals who help bring this important experience to our students. Without science fairs, many students would never have an opportunity to do real scientific research.

The Rio Grande Valley Regional Science and Engineering Fair will be held Saturday, March 5, 2005 on the UTB/TSC campus. Enclosed in this packet are documents for your information and registration.

1. Fair timeline
2. General Information
3. Agenda
4. Required ISEF Forms for all projects: (Other forms available on the web at www.sciserv.org/isef)
5. Institutional Review Board and Scientific Review Committee Information
6. Official Entry Forms, ISEF forms, registration fee and abstract – Due February 15, 2005

(ISEF rules and forms are available on line at www.sciserv.org/isef)

Each secondary campus may send entries equal to 2% of their total school enrollment. For example, a campus with 1,000 students could enter 20 projects.

Please pay close attention to the "prior approval" rules for certain projects. Projects needing prior approval should have their forms approved by an official SRC or IRB prior to beginning experimentation. Teachers, parents and students should become familiar with all the ISEF rules which are available at www.scieserv.org/isef/forms/.

The adult sponsor is responsible for assuring that projects meet ISEF rules. No projects will be allowed to participate in the Rio Grande Valley Regional Science and Engineering Fair that do not meet ISEF guidelines.

The Regional SRC deadline to review ISEF forms is until January 21, 2005. Review will be completed within the following week. The paperwork should be mailed to Mike Baldwin at 1900 E. Price Rd., Brownsville, Texas, 78521.

All ISEF forms including registration fee ($10.00) must be submitted by February 15, 2005.

The Texas State Science Fair will be held April 1-3, 2005. The top 3 winners in each category of the Regional Science Fair are eligible to participate.

Your participation in all aspects of the Fair will contribute greatly to its success. Let's celebrate our students' efforts in science! Thank you for sharing in this most prestigious event.

Mike Baldwin
Director of the Rio Grande Valley
Science and Engineering Fair

Regional Science & Engineering Fair Timeline

Fair Date: Saturday, March 5, 2005

Place: Manuel Garza B. Gymnasium at the University of Texas at Brownsville and Texas Southmost College, Brownsville, Texas

Required Preparation:

- Establish a campus Institutional Review Board (IRB) comprised of an administrator, a non-sponsoring science teacher, and a health professional.
- Submit all projects that need prior approval to the Regional SRC by the established deadlines before experimentation begins.
- Campuses or districts may form SRC committees but SRC members must be registered with the Rio Grande Valley Regional Science Fair Director.
- All students must submit required documentation (Checklist for Adult Sponsor, Form 1A-Research Plan, Form 1B-Approval Form, and any other applicable forms.)
- Every student must submit an abstract with their registration form.
- Submit a registration fee of $10.00 per project (students may only enter one project).

Important Dates and Contacts:

DUE DATES	ITEM	CONTACT PERSON
September 8, 2004	Rio Grande Valley Regional Science Fair Planning Meeting	Mike Baldwin Regional Science Fair Director (956) 548 8246
September 25, 2004	Rio Grande Valley Science Fair Clinic At UTB & TSC Registration through Region 1	Mike Baldwin Regional Science Fair Director (956) 548 8246
Before experimentation begins and no later than January 21, 2005	All SRC forms for prior approval.	Respective Campus/District SRC Committee or Regional SRC Committee Chairperson- Bob Stone or Mike Baldwin: (956) 548-8133
February 15, 2005	Registration, ISEF Forms, Registration Fees, and Abstract 4:00 p.m. Rm. 202J Administrative Building,1900 Price Rd. Brownsville, TX 78521 **(No Late Entries Accepted)**	Mike Baldwin Regional Science Fair Director (956) 548-8246
March 4, 2005	Project Set-up: 11:00 a.m. – 6:00 p.m.	Mike Baldwin Regional Science Fair Director (956) 548-8246
March 5, 2005	8:00 a.m. – 9:00 a.m. Judges Orientation 9:00 a.m. – 2:00 p.m. Judging 2:00 p.m. – 3:00 p.m. Public Viewing 3:00 p.m. – 4:00 p.m. Awards 4:00 p.m. – 4:30 p.m. Take-down	Mike Baldwin Regional Science Fair Director (956) 548-8246

Rio Grande Valley Regional Science and Engineering Fair
University of Texas at Brownsville and Texas Southmost College
Saturday, March 5, 2005

General Information

General Timeline Requirements:

- Campus coordinators must either hand deliver or mail in registration, ISEF forms, entry fees and abstracts by ***4:00 p.m. on February 15, 2005*** to Rm. #202J – Brownsville ISD, 1900 Price Rd., Brownsville TX 78521
- No late entries will be accepted.
- **Adult sponsors** are responsible for assuring that all projects meet ISEF rules and guidelines and that all forms are properly completed and submitted by deadlines. (ISEF rules and forms are available at www.sciserv.org/isef/ .) **Please note changes in categories and in the rules.**

Registration: Friday, March 4, 2005, 11:00 a.m. – 6:00 p.m.

Registration begins promptly at 11:00 a.m. at the Manuel Garza B. Gymnasium, Brownsville, Texas.

When you check in, you will be shown to your exhibit space, where you are responsible to setup your project. We are not responsible for any unattended projects. Projects not setup in proper spaces will not be judged. Registration closes promptly at 6:00 p.m. Students must bring and set up all materials including lap top computers on Friday, March 4, 2005.

Day of the Fair: Saturday, March 5, 2005

Judging: Saturday, March 5, 2005, 9:00 a.m. – 2:00 p.m.

Only judges and staff are permitted in the exhibit room at this time! It is mandatory that the judges interview each student.

Bring something to keep yourself occupied. You must be available to judges from 8:00 a.m. to approximately 12:00 p.m. It is mandatory that you be interviewed. See the ISEF guidebook for helpful hints with regard to the interview itself. Lunch is on your own.

Awards Ceremony: Saturday, March 5, 2005.

The awards ceremony will begin at 3:00 p.m. on Saturday, March 5, 2005. Everyone is invited to attend. If you are one of the grand prize winners, you will be given the required information for the State Competition or the International Competition. You may remove your projects after the awards ceremony.

Please have all projects removed from the building by 4:30 p.m.

ALL UNCLAIMED PROJECTS WILL BE DISPOSED OF AT THAT TIME.

Teacher Checklist

If you are advising a student who is participating in an Intel ISEF-affiliated science fair, you can use this checklist as a guideline.

START EARLY!

Students should begin planning their science fair projects at the beginning of the school year or even at the end of a school year so that they can work over the summer.

Participate in a school science fair.

- Follow guidelines for your school, but if your students are considering entry into a local Intel ISEF-affiliated fair, you must comply with International Rules as well.
- Work with your school science fair coordinator to avoid conflicts between dates for your school fair and the Rio Grande Valley Regional Science and Engineering Fair (March 4-5, 2005).

Participate in the Rio Grande Valley Regional Science and Engineering Fair

1. Attend the Rio Grande Valley Regional Science and Engineering Fair Planning Meeting on September 8. 2005 at the SETB 3rd Floor Conference Room at UTB/TSC.
2. Attend the Rio Grande Valley Regional Science and Engineering Fair Clinic and encourage students and parents to attend. (RGV Science Fair Clinic September 25, 2005 at UTB/TSC SET B Lecture Hall)
3. Prepare a student timeline with key dates.
4. Encourage students to select a topic for their research projects and direct them to research sources.
5. Approve projects and direct students to fill out a research plan. Research plans must be submitted and approved prior to the start of the project. Refer to the Intel ISEF student handbook for forms and guidelines. (www.scieserv.org/isef/)
6. Review judging expectations with your students. Let them know how their projects will be evaluated.
7. If possible, schedule time with your science fair coordinator for students to work on their project boards after school. Recruit parent volunteers to help with project completion at after school sessions.
8. Hold a classroom science fair to help students practice their project presentations and to polish and edit their project.
9. Compete at Rio Grande Valley Regional Science and Engineering Fair (March 4-5). Celebrate your students' accomplishments.
10. If a project is selected for the Intel ISEF, help your student(s) polish their presentations before heading to the Intel ISEF.

Read the International Rules and Guidelines

All students should begin their science fair project by reviewing the International Rules for Precollege Science Research and Guidelines for Science and Engineering Fairs. Many projects require adult supervision

and approval by a Scientific Review Committee (SRC) or an Institutional Review Board (IRB) before experimentation begins.

When preparing for a science project you should read the Rules and Guidelines.

Complete Paperwork

Properly completing all of the paperwork is a necessary and important part of completing your science fair project. These links located at www.sciserv.org/isef/ can help steer you in the right direction.

Intel ISEF Rules Wizard (http://www.sciserv.org/isef/students/wizard/index.asp)

Asks questions about your planned project and tells you which forms you need to complete. The Rules Wizard has been designed as a first step to help you determine what forms and approvals are necessary before beginning a science fair project intended for competition at an ISEF-affiliated fair or the Intel International Science and Engineering Fair. Your answers to the list of questions will return a list of forms and information that most likely will pertain to your project. These forms and the accompanying rules should be reviewed closely with a teacher or mentor BEFORE experimentation begins.

This wizard is intended to be a helping tool but cannot account for all specifics and situations of your individual project. Please be sure to review the International Rules. The ISEF SRC (Scientific Review Committee) is available via e-mail or phone to answer any specific questions you may have.

Overview of Forms and Dates (http://www.sciserv.org/isef/teachers/forms_dates.asp)

Provides a brief explanation of each form in the Rules and Guidelines and when it should be completed.

Common Scientific Review Committee (SRC) Problems

(http://www.sciserv.org/isef/teachers/src_problems.asp)

Top 10 SRC Problems from Regional SRC Reports

1. Incomplete paperwork - missing forms or signatures
2. Not getting paperwork in on time
3. Missing human subject forms 4a and 4b after conducting a survey or otherwise using humans in the project
4. Not differentiating between a qualified scientist and a designated supervisor
5. Inappropriate handling and safety precautions for the use of bacteria and molds (potentially-pathogenic agents)
6. Incomplete research plans, including insufficient bibliography
7. Failure to obtain prior SRC approval
8. Bad dates - paperwork not signed in the appropriate order prior to the start of experimentation
9. Not having prior paperwork for continuing projects
10. Elementary and junior projects and teachers not following the International Rules

Student Science Fair Checklist

START EARLY!

Many students begin planning their research at the end of the school year so that they can conduct research during the summer and fall.

1. Decide what science fairs you are going to enter:
    - School fair
    - Rio Grande Valley Regional Science and Engineering Fair (March 4-5, 2005)
2. Attend a science fair clinic (September 25, 2005 at UTB/TSC SETB Lecture Hall)
3. Find a topic that interests you and research what already is known about the topic.
4. Narrow the topic to a specific scientific problem and develop an experiment to solve that problem. (See the Scientific Method to help plan your experiment.)
5. Discuss the project with your parents and teacher and review with them the ISEF Rules and Regulations, noting the specific rules that might apply to your type of research (i.e. are you working with human subjects or animals or working with hazardous substances?)
6. Develop a hypothesis (Scientific Method) and develop a procedure.
7. Write a detailed research plan about how you will conduct the research and then complete the required Intel ISEF forms and any additional local science fair forms required. You must obtain the appropriate approvals, as needed, before the start of experimentation. This may involve being reviewed by your local Institutional Review Board (IRB) or Scientific Review Committee (SRC).
8. Once your approvals and forms are in order, begin your experimentation following your research plan and any revisions that those supervising or approving your research have recommended.
9. Make observations and collect data in a project journal.
10. Interpret the data and observations.
11. Draw conclusions .
12. Finalize your project for presentation.
13. Write the research paper and abstract. (RGV Science Fair does not require a research paper.)
14. Create the project exhibit board being sure to follow the Display and Safety Regulations.
15. Practice your presentation and prepare to answer judges' questions.
16. Present the project at your school Science Fair and/or Rio Grande Valley Regional Science Fair.

District/School Support for the Rio Grande Valley Science & Engineering Fair

The Rio Grande Valley Regional Science and Engineering Fair is an annual event with more than 35 years of history. The fair is hosted by the University of Texas at Brownsville and Texas Southmost College and presented through the volunteer efforts of numerous individuals and organizations. While attending the fair be aware that one of the major goals of the science fair is to provide a motivating experience that encourages students to explore careers in mathematics, science and engineering. Please help make this a positive experience for everyone. Be sure to encourage and thank the many volunteers that you encounter. If you have any suggestions or concerns, please contact the RGV Regional Science Fair Director. Also, consider volunteering your support. The Science Fair has several committees that continually need volunteers.

Scientific Review Committee

A Scientific Review Committee (SRC) is a group of adults knowledgeable about regulations concerning experimentation. The SRC must evaluate all projects in these areas before experimentation may begin. The Fair SRC will also review the documentation for ALL projects shortly before competition to ensure that students have followed all applicable rules and that the project is eligible to compete. Individuals with a science background who would like to help review science projects are encouraged to contact the science fair director. Schools and school districts who are interested in improving student research should consider recommending someone to this committee. Members become familiar with the science fair rules and safety concerns in conducting student research.

Tally Committee

The Tally Committee helps tally the judging sheets and enter scores for the awards ceremony.

Awards Committee

The Awards Committee helps to organize and solicit the many special award, scholarships and trophies that are presented at the science fair.

Judges Committee

About ninety judges are needed to judge the science projects. Quality judges with a good science background are always needed. Consider recruiting judges from your community to help judge at the fair.

Fund Raising

The University of Texas at Brownsville and Texas Southmost College and Region 1 Service Center provide many of the resources needed for the fair. The registration fees and donations cover the rest of the costs. Monetary donations are needed to help cover the costs for the student travel to ISEF. Up to $12,000 is needed to cover all the expenses of holding the fair. Individuals are always needed to help with fund raising.

Individuals who would like to volunteer to help with the Rio Grande Valley Regional Science Fair should contact Mike Baldwin at (956) 548 8246, e-mail (mebaldwin@bisd.us) or write to Mike Baldwin, RGV Science Fair Director, 117 Sally Lane, Brownsville, Texas 78526.

Changes & Modifications for 2004 - May 2005

General

- The student entry fee for the RGV Regional Science and Engineering Fair has increased to $10.00 per project.
- Adherence to the ethics statement has been added to the requirements for all projects.
- A clarification of conditions for longitudinal studies has been added.
- Membership in team projects cannot be changed during a given research year including converting from an individual project or vice versa, but may be altered in subsequent years.
- Introduction or disposal of non-native species, toxic chemicals or pathogens into the environment is prohibited.
- The title of Animal Care Supervisor has been eliminated. Animal care supervision is the responsibility of a Designated Supervisor.
- There have been changes in category designations for the Intel ISEF.

Vertebrate Animals
This section has major revisions and reorganization. Please review carefully.

- There are two categories of vertebrate animal studies:

    A. Observational, behavioral or nutritional studies which can be conducted in a non-regulated site and need prior approval by an SRC

    B. Studies which must be conducted at a regulated research institution and need prior approval by an Institutional Animal Care and Use Committee

- Each category of vertebrate animal studies requires a different Vertebrate Animal Form (Form 5A or Form 5B)

Human and Vertebrate Animal Tissues
This section has been modified. Please review carefully.

- If a tissue is obtained from an animal that was euthanized solely for a student's project, the study must be considered a vertebrate animal project and must adhere to the vertebrate animal rules.
- All other human and vertebrate animal tissue studies do not need prior SRC review and can be supervised by a Designated Supervisor
- A tissue form is required for ALL tissue studies regardless of the source including established cell and tissue cultures, meat and meat by-products and hair.
- The Human and Vertebrate Animal Tissue Form (6) has been modified.

Official Intel International Science and Engineering Fair Forms

Official Forms and Text from Science Service

Also Available at:

http://www.sciserv.org/isef/document/form2005.pdf

Rio Grande Valley Regional Science and Engineering Fair
University of Texas at Brownsville and Texas Southmost College
Saturday, March 5, 2005

ISEF FORMS

All sections of the International Rules for Precollege Science Research: Guidelines for Science and Engineering Fairs, including necessary forms are available for downloading as Adobe® Acrobat Reader documents (.PDF) at www.scieserv.org/isef/.

The forms also have been created to use the form feature in Acrobat Reader which enables you to complete appropriate fields on the computer before printing. All fields must be completed and signed by the appropriate persons after printing. The work done on the screen can be printed but not saved.

Note: The only three form formats accepted for entry into the ISEF or its Affiliated Fairs are:

1) original forms
2) locally copied original forms
3) forms printed from .PDF files (you will need Adobe® Acrobat Reader).

PDF Forms are not to be electronically transferred to Science Service. The forms must be printed for completion and signatures before submission. If you wish to print/view these .PDF files, you will need Adobe® Acrobat Reader.

The **Rules and Guidelines Booklet** is available at http://www.sciserv.org/isef/document/hbk2005.pdf. The booklet is divided into sections for easier downloading.

Forms and Dates

The Intel ISEF forms constitute written documentation of what will occur in a research project. They are designed to provide the information that is needed to review the project to ensure compliance with the Intel ISEF rules and with laws and regulations that apply to the project. The forms should be filled out and signed before any research takes place. (Only Forms 1C, 7, and the abstract are done after the research.) The dates of the signatures reflect when the approval or consent is given.

Checklist (1)
The checklist is provided so that the adult sponsor can review what information (and, therefore, which forms) must be provided. The date signed is the date that the sponsor first reviews the project plan.

Research Plan (1A)
On this page, the student outlines what the project is about. Items that especially need to be clear are the following:

#4 Any project conducted in a similar area of research as previous projects should be considered a continuation. If the project is a continuation, explain on Form 7 as completely as possible how the project will differ from previous experimentation because ONLY a new and different research project is allowed. (If based on previous research, the current-year project must demonstrate significant progress.)

#5 Explain when the actual experimental procedure (not the background literature review) will begin and end because ONLY a 12-month project that occurred within the last 18 months before this Intel ISEF is allowed.

#7 Explain where the experimental research will be done: home, university, field. Pathogens may NOT be cultured at home. Research animals must be housed in school or institutional settings only. Universities, research facilities, and industrial settings will require the additional documentation of Form 1C to explain what was done at each facility.

#8 If any of these areas are to be part of the research, additional documentation and additional approvals are required to explain how the research will be done, and the plan must be approved **BEFORE** experimentation can begin.

#9 Attach a research plan (next form).

RESEARCH PLAN ATTACHMENT
Explain clearly and in detail what will be done in the research project.

Research Plan (1B)
These statements attest that each of these people (or committees) approves or consents to this project. The dates should be signed as described below:

a) Adult Sponsor	Date indicates when they approved this project.
b) Student	Date they attest that they understand the possible risks and that they will read and follow the rules.
c) Parent/Guardian	Date they consent to their child doing this project.
d) SRC Approval **BEFORE**	Date that the committee reviews this project BEFORE the experimentation. Projects that must be pre-approved are research in these areas: human subjects, nonhuman vertebrate animals, pathogenic agents, controlled substances, recombinant DNA, and human or animal tissue.
e) SRC Approval **AFTER**	This applies only to projects that needed pre-approval by the SRC but were done at a research institution and were pre-approved by that institution instead of the SRC. Date signed indicates when the affiliated SRC approved this project after it was completed. Attach all documentation from the research institution showing approval of the project.
f) Final SRC Approval	All projects must be reviewed by the SRC after the experimentation is complete and shortly BEFORE they compete in the affiliated fair. The date signed shows the date that SRC gives final approval to this project.

Research Institution (1C)
This form explains what the student researcher actually did and is signed after the project is completed. This form is only needed if the research was done at a research institution (university lab, for example) or in an industrial setting.

Qualified Scientist (2)
On this page, the scientist explains what will be done to oversee this project. The date signed indicates the date that they approve this project (before experimentation takes place).

Designated Supervisor (3)
The designated supervisor explains how the project will be supervised and what safety precautions will be employed. The date signed is the date that they approve this project.

Human Subject and Informed Consent (4)
This page is filled out by the student researcher to explain to the IRB how the safety and well-being of the test subjects will be ensured. The IRB reviews the project, checks the risk level and each member signs with the date they approve this project. This review and the date signed must be **BEFORE** any experimentation takes place.

Copies of this form are used (for informed consent) to explain very completely to the research subject and their parent (guardian) exactly what will happen to the subject in the project. Questionnaires, sample tests, and so on MUST be given to the IRB and to the parent/guardian. If they approve, they sign with the date that they approve. (**Before** the experiment begins). If a photo is to be displayed, the participant signs and dates it when they give permission.

Nonhuman Vertebrate (5)
This form is filled out by the student researcher and describes the housing and care for the animals. The bottom of the form is filled out by the supervisor or scientist and is signed and dated when they approve this project with these housing conditions **before** experimentation begins.

Human & Animal Tissue (6)
This form is filled out by the student researcher and explains the source of the tissue. The tissue provider signs in the appropriate boxes to certify the safety, acquisition, etc. The SRC must sign to show they approve the use of this tissue and the date (**before** experimentation) that they approve. If an established cell line is used or other exempt tissue (as described in the rules), the researcher may explain that on this page, but no signatures are needed in this case.

Continuation Projects Form (7)
Any project conducted by the student or team in a similar area of research as previous projects should be considered a continuation. Explain as completely as possible how the project is different from previous experimentation because ONLY a new and different research project is allowed. (It can be based on previous research, but must be new and different research.) Date signed is the date the student researcher is certifying that this information is correct.

Abstract
ISEF finalists must use the on-line system. Regional and local fairs use the Adobe® Acrobat® file listed above. The abstract is a summary written after experimentation that explains the project. The date signed is the date the student researcher certifies that the statements are correct.

Important!

Project entries must adhere to ISEF Rules and be submitted with all the required original forms at the time of registration. ISEF forms must have original signatures. No photocopies will be accepted. Sponsors are responsible for making sure that students follow the ISEF Rules.

Intel ISEF Display and Safety Regulations

Not Allowed at Project or in Booth

1) Living organisms, including plants

2) Taxidermy specimens or parts

3) Preserved vertebrate or invertebrate animals

4) Human or animal food

5) Human/animal parts or body fluids (for example, blood, urine)

7) Laboratory/household chemicals including water (Exceptions: water integral to an enclosed apparatus or water supplied by the Display and Safety Committee)

8) Poisons, drugs, controlled substances, hazardous substances or devices (for example, firearms, weapons, ammunition, reloading devices)

9) Dry ice or other sublimating solids

10) Sharp items (for example, syringes, needles, pipettes, knives)

11) Flames or highly flammable materials

12) Batteries with open-top cells

13) Awards, medals, business cards, flags, endorsements and/or acknowledgements (graphic or written) (Exception: Intel ISEF medal(s) may be worn at all times.)

14) Photographs or other visual presentations depicting vertebrate animals in surgical techniques, dissections, necropsies, or other lab procedures

15) Active Internet or e-mail connections as part of displaying or operating the project at the Intel ISEF

16) Glass or glass objects unless deemed by the Display and Safety Committee to be an integral and necessary part of the project (Exception: glass that is an integral part of a commercial product such as a computer screen)

17) Any apparatus deemed unsafe by the Scientific Review Committee, the Display and Safety Committee, or Science Service (for example, large vacuum tubes or dangerous ray-generating devices, empty tanks that previously contained combustible liquids or gases, pressurized tanks, etc.)

Allowed at Project or in Booth, BUT with the Restrictions Indicated

1) Soil or waste samples **if permanently sealed in a slab of acrylic**

2) Postal, Web and e-mail addresses, telephone and fax numbers **of finalist only**

3. Photographs and/or visual depictions **if**:

a) They are not deemed offensive or inappropriate by the Scientific Review Committee, the Display and Safety Committee, or Science Service. b) Credit lines of their origins: “Photograph taken by…” or “Image taken from…” are attached. (If all photographs being displayed were taken by the Finalist

or are from the same source, one credit line prominently displayed is sufficient.)
c) They are from the Internet, magazines, newspapers, journals, etc., and credit lines are attached (If all photographs/images are from the same source, one credit line prominently displayed is sufficient.)
d) They are photographs or visual depictions of the Finalist.
e) They are photographs of human subjects for which signed consent forms are at the project or in the booth. (Human Subjects Form 4 or equivalent photo release signed by the human subject must be included in the paperwork and properly checked on the Official Abstract and Certification.)

4) Any apparatus with unshielded belts, pulleys, chains, or moving parts with tension or pinch points **if for display only and not operated**

5) Class II lasers **if**:

a) Operated only by the Finalist.

b) Operated only during Display and Safety inspection and during judging.

c) Labeled with a sign reading "Laser Radiation: Do Not Stare Into Beam."

d) Enclosed in protective housing that prevents physical and visual access to beam.

e) Disconnected when not operating.

6) Class III and IV lasers **if for display and not operated**

7) Any apparatus producing temperatures that will cause physical burns **if adequately insulated**.

Electrical Regulations at the Intel ISEF

1) Finalists requiring 120 or 220 Volt A.C. electrical circuits must provide a UL-listed 3-wire extension cord which is appropriate for the load and equipment.

2) Electrical power supplied to projects and, therefore, the maximums allowed for projects is 120 or 220 Volt, A.C., single phase, 60 cycle. Maximum circuit amperage/wattage available is determined by the electrical circuit capacities of the exhibit hall and may be adjusted on-site by the Display and Safety Committee. For all electrical regulations, "120 Volt A.C." or "220 Volt A.C." is intended to encompass the corresponding range of voltage as supplied by the facility in which the Intel ISEF is being held.

3) All electrical work must conform to the *National Electrical Code* or exhibit hall regulations. The guidelines presented here are general ones, and other rules may apply to specific configurations. The on-site electrician may be requested to review electrical work on any project.

4) All electrical connectors, wiring, switches, extension cords, fuses, etc. must be UL-listed and must be appropriate for the load and equipment. Connections must be soldered or made with UL-listed connectors. Wiring, switches, and metal parts must have adequate insulation and overcurrent safety devices (such as fuses) and must be inaccessible to anyone but the Finalist. Exposed electrical equipment or metal that is liable to be energized must be grounded or shielded with a non-conducting material or with a grounded metal box or cage to prevent accidental contact.

5) Wiring which is not part of a commercially available UL-listed appliance or piece of equipment must have a fuse or circuit breaker on the supply side of the power source and prior to any project equipment.

6) There must be an accessible, clearly visible on/off switch or other means of disconnect from the 120 or 220 volt power source.

Maximum Size of Project at the Intel ISEF

30 inches (76 centimeters) deep
48 inches (122 centimeters) wide
108 inches (274 centimeters) high including table

At the Intel ISEF, fair-provided tables will not exceed a height of 36 inches (91 centimeters).

Project must be positioned at the back of the booth and parallel to the rear of the booth.

Maximum project sizes include all project materials and supports. If a table is used, it becomes part of the project and may not itself exceed the allowed dimensions nor may the table plus any part of the project exceed the allowed dimensions.

At the Intel ISEF, any project with a component that will be demonstrated by the Finalist may be demonstrated only within the confines of the Finalist's booth. When not being demonstrated, the component plus the project may not exceed allowed dimensions.

Items Required to be Visible at the Project at the Intel ISEF

Note: All forms required to be visible must be vertically displayed.

- Registered Research Institutional/Industrial Setting Form (1C) - if applicable
- Continuation Project Form (7) - if applicable

Additional Items Required to be at the Project But Not Displayed at the Intel ISEF

- Human Subject Forms (4) (or equivalent form provided by a registered research institution) for human subjects of the research, surveys, photographs, etc. (if applicable) are confidential information, must **not** be displayed, but **must be available in the booth** in case asked for by a judge or other Intel ISEF official. Human Subjects Form (4) or an equivalent photograph release signed by the human subject is required for visual images of humans (other than the Finalist) displayed as part of the project.
- Other forms [including, but not limited to, Checklist for Adult Sponsor/Safety Assessment Form (1), Research Plan (1A), and Approval Form (1B)] which are required for the project or for Scientific Review Committee approval do not have to be displayed as part of the project but should be available in the booth in case asked for by a judge or other Intel ISEF official.

General Intel ISEF Information and Requirements

1. No changes, modifications, or additions to projects may be made after approval by the Display and Safety Committee and the Scientific Review Committee.
2. A project data book and research paper are not required but are recommended.
3. The only acceptable informed consent form for use at the Intel ISEF is the official Human Subjects Form (4) in the International Rules for Precollege Science Research or an equivalent form provided by a registered research institution (see Form 1C) or, in the case of display of photographs only, an equivalent photograph release signed by the human subject.
4. Prior years' data, written material or visual depictions may not be displayed on the vertical display board, except that the project **title** displayed in the Finalist's booth may mention years or which year

the project is (for example, "Year Two of an Ongoing Study".) Continuation projects must have the Continuation Project Form (7) displayed.

5. Finalists using audio-visual or multi-media presentations (for example, 35mm slides; videotapes; images, graphics, animations, etc., displayed on computer monitors; or other non-print presentation methods) must be prepared to show the entire presentation to the Display and Safety inspectors before the project is approved.

6. No photographs or any other visual depictions may be included in any manner at a project or in the booth if they are deemed visually offensive by the Scientific Review Committee, the Display and Safety Committee, or Science Service. This includes, but is not limited to, visually offensive photographs or visual depictions of invertebrate or vertebrate animals, including humans. The decision by any one of the groups mentioned above is final.

7. If a project fails to qualify and is not removed by the Finalist, Science Service will remove the project in the safest manner possible but is not responsible for damage to the project.

8. Any copies of disks, CD's, printed materials, etc. (including unofficial abstracts) designed to be distributed to judges or members of the public which are confiscated by the Display and Safety Committee will be discarded and will not be returned to the Finalist.

9. Project sounds, lights, odors or any other display items must not be distracting.

10. Project must be positioned at the back of the booth and parallel to the rear of the booth.

11. Finalists must be present at their projects for the Display and Safety inspection. The inspection is a process that takes place between the Finalist and inspector; therefore, no other persons should be present representing the Finalist beyond an interpreter if necessary.

12. Any project with a component that will be demonstrated by the Finalist may be demonstrated only within the confines of the Finalist's booth. When not being demonstrated, the component plus the project may not exceed allowed dimensions

Top Five Intel ISEF SRC Problems (Guaranteed to require an interview)

1. Vertebrate animal projects without proper IACUC approval or lacking appropriate detail in the research plan

2. Human subject projects without evidence of proper prior approval or informed consents

3. Projects involving the culture of potentially-pathogenic and pathogenic agents without appropriate detail about materials cultured, methods, or location of culturing and storage
   MUST NOT BE DONE IN A HOME ENVIRONMENT

4. Continuing projects without enough detail in the research plan to demonstrate significant progress, including an abstract that is often too similar to the previous year's

5. Projects that have eligibility questions regarding either the number of students involved in the project (team to individual or too many team members), the longevity of the research involved, or the age of the participants

Intel ISEF Category Descriptions

Behavioral and Social Sciences
Human and animal behavior, social and community relationships--psychology, sociology, anthropology, archaeology, ethology, ethnology, linguistics, learning, perception, urban problems, reading problems, public opinion surveys, educational testing, etc.

Biochemistry
Chemistry of life processes--molecular biology, molecular genetics, enzymes, photosynthesis, blood chemistry, protein chemistry, food chemistry, hormones, etc.

Botany
Study of plant life--agriculture, agronomy, horticulture, forestry, plant taxonomy, plant physiology, plant pathology, plant genetics, hydroponics, algae, etc.

Chemistry
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
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 Science
Geology, minerology, physiography, oceanography, meteorology, climatology, speleology, seismology, geography, etc.

Engineering
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
Study of pollution (air, water, and land) sources and their control; ecology.

Mathematics
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
Study of diseases and health of humans and animals--dentistry, pharmacology, pathology, ophthalmology, nutrition, sanitation, pediatrics, dermatology, allergies, speech and hearing, etc.

Microbiology
Biology of microorganisms--bacteriology, virology, protozoology, fungi, bacterial genetics, yeast, etc.

Physics
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.

Space Science
Astronomy, planetary science, etc.

Zoology
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
Study conducted by two or three students in any discipline.

Official Abstract form available at
www.sciserv.org/isef/

Official Abstract must be completed and submitted with official entry form and paperwork.

Rio Grande Valley Regional Science and Engineering Fair
OFFICIAL ENTRY BLANK

TYPE OR PRINT LEGIBLY: (FILL IN COMPLETELY)

Exhibitor:_____ Grade_____

Team Members _____

_____

Address:_____ Age:_____
Street (Box)

City:_____ Zip:_____

Phone:_____

School:_____ City:_____

Sponsor:_____ Home Ph._____

School Phone:_____

CHECK HERE IF YOU NEED:
_____ FLOOR SPACE
_____TABLE SPACE
_____ ELECTRICITY

CERTIFICATIONS REQUIRED
Vertebrate_____
Human_____
Recomb.DNA_____
Tissue_____
State/Fed Permit_____

ALL ENTRIES MUST HAVE THE ISEF CERTIFICATION REQUIREMENTS AND DEADLINES FOR SUBMISSION IN ORDER TO QUALIFY TO PARTCIPATE AT THE STATE LEVEL.

TITLE OF EXHIBIT: _____

Check one in each group:

SECTION:

_____ Junior Division(6-8)

_____Senior Division (9-12)

CATEGORY:

_____Behavioral/Social
_____Biochemistry
_____Botany
_____Chemistry
_____Computer Science
_____ Earth Science
_____ Engineering
_____ Environmental
_____ Mathematics
_____ Medicine/Health
_____ Microbiology
_____ Physics
_____ Space Science
_____ Zoology
_____Team Projects

ALL ENTRIES MUST BE RECEIVED BY **4:00 P.M. ON February 15, 2005**. LATE AND/OR INCOMPLETE ENTRIES WILL NOT BE ACCEPTED. ALL ISEF REQUIRED CERTIFICATION PAPERS ARE THE RESPONSIBILITY OF THE EXHIBITOR AND MUST BE SUBMITTED WITH APPLICATION.

MAIL OR HAND DELIVER ENTRY FORMS, REQUIRED CERTIFICATIONS, AND CHECK TO:
B.I.S.D. ADMINISTRATIVE BUILDING
MIKE BALDWIN
1900 PRICE ROAD – CURRICULUM DEPT.
BROWNSVILLE, TEXAS 78521

Registration Fee: $10.00 per entry

MAKE CHECKS PAYABLE TO THE RGV REGIONAL SCIENCE FAIR.
ANY STUDENTS WHOSE FORMS ARE NOT IN ORDER MAY NOT EXHIBIT AT THE RGV REGIONALSCIENCE FAIR.