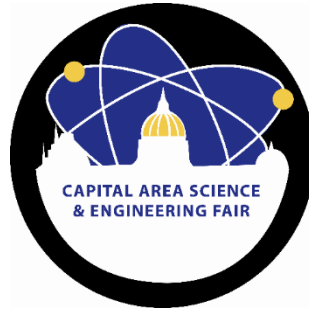


2023-2024 SPONSOR REFERENCE GUIDE



Capital Area Science & Engineering Fair

OFFICE

Penn State Harrisburg
777 W. Harrisburg Pike
202 Church Hall
Middletown, PA 17057



PennState
Harrisburg

MAILING ADDRESS

CASEF c/o Knowles
103 Newport Road
Duncannon, PA 17020

Web

www.casef.org

501(c)(3) EIN 23-2058836 PA BOC #35377
PA EITC Innovative Educational Program

Email

director@casef.org
director@casef.org

Registration

<https://casef.stemwizard.com>
Young Scholars <https://casefys.stemwizard.com>



FAIR FORMAT

CASEF is an in-person event. The students who would need to travel more than 100 miles may request virtual participation. The Board of Directors and Fair Committee believe there is great value to the in-person format. Students will continue to be asked to make video for the judges' review. This component of the registration saves the judges a great deal of time and allows them to prepare more specific questions for the interview. The video also provides a "Plan B" in the case of inclement weather or other reasons the in-person event could not be held. There may be differing opinions as to the fair format, but the goal is the same: to encourage the young scientists and engineers of today to make a better tomorrow. Thank you for being an integral part of that mission.

2024 CHANGES SUMMARY

This is a listing of the major changes for the 2024 fully in-person CASEF. Please send questions to director@casef.org

1. **LOCATION: Penn State Harrisburg, Middletown, March 4-7. JUDGING TIMES HAVE CHANGED: Senior 10 - 11:30 am JUNIOR 12-1:30pm. NO STUDENTS CAN BE DROPPED OFF UNCHAPERONED!**
2. The school registration fee covers up to 10 projects. Any additional projects should be listed on the Additional Project Inventory will be considered based on space availability. A registration fee of \$15/project will be due upon acceptance. **ALL PROJECTS MUST BE RANKED ON THE INVENTORY** – strongest project in #1 and weakest in #10. ONLY 10 spots per school are guaranteed. **Payment may be made by credit card with a 4% processing fee.**
3. Schools are expected to form an IRB to review and approve human participant and potentially hazardous material projects that do not need SRC approval. ALL DEADLINES MUST BE MET – **NO TRIALS CAN BEGIN BEFORE APPROVAL.** Deadline for SRC submissions is **NOVEMBER 21st.** **Please email the director with the student's name, grade, school and project title to notify SRC that the project is awaiting approval. Please only submit projects that require prior approval, including Human projects that have greater than minimal risk. Projects that do not require prior approval will NOT be reviewed by the SRC.**
4. **MICROBIOLOGY PROJECT UPDATE!!!!** Microbiology projects are once again permitted in grades 7 -12 with compliance to ISEF rules. The ONLY way a microbiology project can be accepted is if it is done in a Registered Research Institution (RRI) with all the completed forms and letters OR completed in a BSL-2 school lab and pre-approved by CASEF SRC. Some exempt organisms may be used in a BSL-1 lab. **CASEF will approve the use of the ISEF exempt organisms if the laboratory conditions are in compliance with the ISEF RULES. ISEF MANDATES ALL BSL-2 labs must be inspected either physically or virtually by the SRC.**
[Checklist for Biosafety Level 2 Laboratory Operations \(windows.net\)](#)
5. Award presentations are scheduled for Thursday March 7 at 6:30 pm at PSU Harrisburg. The event will be live-streamed and is planned to be aired on the monitors in the lobby area for SRO and families with young children. We will require an anticipated attendance count prior to the fair. Please make your students and families aware of this so that we can plan accordingly,
6. Disqualification criteria: Please see page 25.
7. CASEF Young Scholars Program – Grades 5 & 6 students will be judged at set-up. See pages 3-5.
8. **NEW CATEGORY: MARI - Math, Research-based, and Informatics (tech applications.)** These are valid projects that do not follow a traditional experiment or engineering designs. TEEM will now be **CERT-Computer, Engineering, Robotics, and Technology.**

9. NEW NAMES for documents: The “Abstract” will now be referred to as the “**PRE-ABSTRACT.**” It should be less than 250 words and should include the problem statement/application, a brief description of protocol and anticipated results. Completed as part of the registration. **ABSTRACTS DO NOT MENTION OR REFERENCE PRIOR PROJECTS**

The “Summary: will now be called the “**Final Abstract.**” It may or may not be different from the “pre-abstract.” In addition to the anticipated results, it has a short analysis of the data and a conclusion statement are included.

Young Scholars

In 2023, CASEF introduced the Young Scholars program for students in grades 5 and 6. Students are invited to conduct a research project and display it at the fair. The 2024 fair will judge these projects and they will be earning placement awards. This competition runs concurrently with the CASEF junior and senior divisions event. Students are invited to register at www.casefys.stemwizard.com The cost to enter is \$15 per project. Students are expected to conduct an experiment and present a trifold display board. Judging will take place on Monday evening between 4pm and 7pm.

Young Scholar Rules

1. Please follow safety protocol as appropriate for your experiment. Do you need goggles, gloves, special equipment, sharp tools, chemicals, tools, electrical equipment, etc.?
2. The project needs to be an experiment where a variable is tested. No models of science concepts will be accepted.
3. NO project may use human participants, animals, drugs/alcohol, firearms/explosives, nicotine products, hazardous materials/chemicals, microbes including bacteria and mold.
4. Please plan for proper disposal of waste and chemicals.
5. When registering, the PRIMARY email will receive the notification information and the parent email will be copied. If the sponsor is NOT the student or parent email, they will need to have the student log in information to check the progress and access to the student or parent email to monitor registration process.
6. Entry fee is \$15 per project. Please mail check to the CASEF mailing address: c/ 103 Newport Road, Duncannon, PA 17020 or pay with credit card on the CASEF website (a fee will be added) www.casef.org

Questions, please contact the fair director: director@casef.org

Young Scholars will be expected to discuss the following in the judging interview:

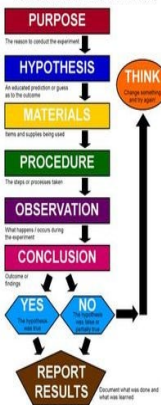
1. "Tell me about your project." – give a brief (1 -2 minute) summary about your project. It should cover what you investigated, how did you do the experiment, what data did you collect (state the averages), what did the data mean, and give a conclusion statement.
2. What did you find out when you did your background research? Connect the background research to your project and hypothesis.
3. Why was the topic interesting to you?
4. What were the variables (what was the one thing you changed to be tested)?
5. How does the data explain the original question/problem? How can the information you found out from your experiment be used?
6. What was the most difficult part of the project?
7. What was the most fun part of the experiment?
8. How did you clean up or dispose of materials?
9. What did you learn that surprised you?
10. What would you do differently?
11. How would you expand this project to learn more about the topic? What else do you want to know about this topic?
12. Explain how the display board was made/organized and how it tells the story of the project.
13. What is your next project going to investigate? This topic, or something new?
14. Who helped you with the project and how did they help?
15. Why did you want to participate?



YOUNG SCHOLARS JUDGING RUBRIC

Question	Points Available	Points Earned
1. Does the project have a testable question?	10	
2. Does the conclusion answer the original question?	10	
3. Is there evidence that a thorough, well-planned experiment was conducted? Is there evidence of creativity and a reason or application of the experiment?	10	
4. Was the scientific method used in the project?	10	
5. Is the project age appropriate and conducted with an acceptable level adult help?	10	
6. Is the display neat, cover the topic, and represent what is discussed in the interview?	10	
7. Does the interview demonstrate understanding of the topic and experiment?	10	
8. Does the journal show evidence of following the scientific method, accurate data collection and analysis, and application to the original question?	10	
9. Can the researcher explain areas for further research or improvement?	10	
10. Is the data collected significant to answering the question? Are there enough trials and is the analysis based on the data collected?	10	
TOTAL	100	

THE SCIENTIFIC METHOD



AWARDS

First: 90 – 100
 Second: 80-89
 Third: 70-79
 Honorable Mention: 69 or below

Judge _____

2024 FEE STRUCTURE

The school registration fee, \$50 per eligible grade in the building, will cover ten (10) projects. Up to seven (7) additional projects may be added at the rate of \$15/project if space permits. Please keep this in mind as you prepare your school payments. ***A second inventory for extra projects may be submitted for consideration. Payment will be due upon acceptance. Please note the fee is per PROJECT not per student – a group project counts as ONE project.*** An invoice is available on the CASEF website. Payments may be made with a credit card on the website, but a service fee will be applied. The School Registration Form is also available on the website. Please remember an administrator signature is required. Young Scholars fee is \$15 per project.

STEMWIZARD

Teachers need to re-register for the new fair year. You must log in and update your account from last year's fair and please be sure your students use the name you have listed. New teachers/sponsors need to complete the registration process. <https://casef.stemwizard.com>

Student milestones have changed. NOTE: The waver is permission to use the image of the students and/or project by CASEF and it also permits release of student school contact information to special award presenters and college admission offices. Please make parents aware of this milestone if they are not completing the entry at home. Completing this milestone is mandatory for participation. A signed, hard copy of the Penn State Harrisburg Photo Release (available on the CASEF website) and CASEF insurance waiver must be turned in at registration.

Judges will be able to review the projects prior to interviews to prepare questions for the interview. The placement score for the projects will be based on the interview as well as the display presentation. The video will NOT replace in-person interviews unless the in-person portion of the fair is cancelled for any reason. Please advise your Judges to re-register for the current fair. This is the only way we can provide preview materials.

Sponsors will need to monitor student entries, especially under the "Submission for Judges Review" Milestone. These WILL NOT BE EDITED BY CASEF. It is the first impression the student makes with the judges who are reviewing the project. Spelling, grammar, word usage, etc. make that first impression. **It is very important that the title be in the correct format and less than 85 characters. Otherwise, it will be printed and/or distributed as submitted. Sponsors are given additional days to review entries. It is also the sponsor's responsibility to check the FINAL ABSTRACT to verify the link to the video works and that the video is compliant with the rules.**

The program booklet will be available in PDF format on the CASEF website, a limited number of printed copies will be available upon request. You will be asked to request a number of printed copies on the **Inventory Form**.

Electronic Journals – The journal is 15% of the overall score and a very important part of the project. Students are encouraged to keep both a handwritten and electronic journal. **The journal must be part of the display.**

Both category award and special award judges will view the projects via STEMWIZARD prior to judging day. The projects will be made available to the judges the week prior to the fair. After the deadline, no part of the Submission for Judges Milestone may be changed; if the uploaded files are incomplete, they will be judged as submitted. Please be sure the students answer the milestone for special awards and check all topics that apply to the research even if it is a different category than entered. *For example: A water quality project testing road deicers using macroinvertebrates and aquatic botany species may qualify as an environmental project, zoology project, botany project, and highway/transportation project.* Students will not be able to make corrections or modifications after the deadline closes. This includes the link to the video presentation. **The video is to be at the bottom of the FINAL ABSTRACT, not a separate milestone.**

VIDEO PRESENTATIONS

Each project will be required to submit a video presentation. This video is the first impression of the project for the judges. Please remind the students that a good first impression is very important. This video **will not** replace the in-person interview serve as an introduction to the judges and a back-up if in-person interviews are not possible. Teams must have all team members participate in the video. The project needs to be introduced by project number and title. **NO STUDENT NAMES OR SCHOOLS** (this includes uniforms – business casual attire is recommended.) We are requiring the display board as the background NOT DISPLAY SLIDES LIKE PJAS PRESENTATIONS. It should contain the same information that is submitted in the PDF documents in STEMWIZARD. The display board is the **ONLY** accepted background for the student video presentation.

The video needs to begin with five (5) seconds of the display board alone. The video can be no longer than FIVE (5) minutes and should tell the story of the project: problem, method, results, analysis, and conclusion. The video must be student/school/sponsor produced. Professionally produced videos will be disqualified. Encourage the students to speak candidly and confidently about their project. A memorized speech does not make a good presentation.

Submission for Judges Review Milestone

This milestone was created for the virtual fair. It was highly informative for the judges and requested to be part of the pre-fair review. Many of the items requested have been submitted elsewhere in STEMWIZARD and may be copied and pasted into this location. *This portion will serve as a Plan B if the in-person fair is not possible for weather or any other reason.*

SUBMISSIONS FOR JUDGES REVIEW MILESTONE MUST BE ENTERED IN PDF FORMAT

This is the information the judges will use to preview and prepare questions for interviews and special awards. Please stress how important spelling, grammar, and attention to detail is for this milestone.

PDF #1: Rationale document that contains the Project Number, Title, Problem Statement/Hypothesis, and the Background Research Summary/Purpose of the project and resource citations. *Who Cares? How do you know?*

Materials and Methods document that lists the materials and procedures in a step-by-step format. Include disposal and SURVEYS!!

Data and Analysis document that contains sample Tables/Graphs, Analysis Statement and Conclusion. Be sure to include any citations.

PDF#2: Project FINAL ABSTRACT -less than 250 words - What did you want to find out? How did you do it? What did you expect? Conclusion statement. Also include the link to your UNLISTED YouTube or Google Drive presentation. The video portion must be student-produced and not be longer than five (5) minutes in length. The student(s) voice should be audible; however, faces are optional. ***The project display should be the background for the video.*** There should be no identifying information (names, schools, grade, etc.) and the project should be introduced by project number. The completed video should be submitted through a parent/sponsored approved UNLISTED YouTube link or Google Drive video. The link must be checked to ensure anyone with a link can view the video and it is not restricted to school use. Details on how to do the video are on the CASEF website www.casef.org

*ZOOM INTERVIEWS MAY BE REQUESTED FOR STUDENTS WHO ARE MORE THAN 100 MILES FROM PENN STATE HARRISBURG.

Video presentations MAY replace the live-interview portion of the fair ONLY if the in-person event cannot be held. It is NOT an alternative to in-person participation. All interviews will take place in-person.

LOCAL AND REGIONAL SPECIAL AWARD SPONSORS

abc27 Meteorologists Award
American Chemical Society Southeastern PA Section
American Highway Engineers Association Harrisburg Section
American Psychological Association
Appalachian Audubon Society
BELCO Community Credit Union Environmental Award
Biogenius Invitation
CASEF Exceptional Journal Award
Conodoguin Creek Watershed Association
Dauphin County Conservation District
Dauphin County Medical Society Alliance
Dr. George Love Judge's Award
Environmental Protection Agency Letter of Encouragement
Farzin Charitable Fund of PA - Bright Mind Award
Field Conference of Pennsylvania Geologists
Harrisburg Chapter of the PA Society for Professional Engineers
Harrisburg University of Science and Technology Material Science Award
Harrisburg University of Science and Technology Scholarship
Highmark
JLG Jerr-Dan Oshkosh Corporation Company
Lemelson Young Inventor's Award
Oakes Museum Messiah University Summer Camps
Modjeski and Masters, Inc. Engineering Award
NASA EARTH System Science Award
National Geographic Society That's Geography! Award
National Oceanic and Atmospheric Administration
Office of Naval Research- U S Navy and Marine Corps
Outstanding Biology Award
Outstanding Botany Award
PA Department of Environmental Resources Water Quality Award
PA Society of Professional Engineers
Penn State College of Medicine Award
PSEA Retired
Regeneron Biomedical Science Award
Ricoh American Corporation
Rotary Club of Harrisburg
Stephen F Spector Award
Susquehanna Section Institute of Electrical and Electronic Engineers (IEEE)
Sustainable Energy Fund
Thermo Fisher Scientific Junior Innovative Challenge
Thomas M McAuliffe Memorial Award
Society for In Vitro Biology
Stockholm Junior Water Prize
U.S. Air Force
U.S. Metric Association
UGI Utilities
Wegmans
Wolfram
Women's Transportation Seminar, Central PA Chapter
Yale Science and Engineering Association
Zoo America North American Wildlife Park

If you or someone you know would like to sponsor a special award, please email director@casef.org

ABOUT CASEF

Dr. Thomas Bowman Jr., a local physician, started the fair in 1957 to teach his 12-year-old son, Tom, a lesson. His son considered himself “the smartest person around.” Dr. Bowman took him to see the Westinghouse Talent Search (predecessor of ISEF) exhibit in Washington D.C. After viewing the displays, Tom admitted, “Dad, there are some people smarter than I am.” This was enough to convince Dr. Bowman of the importance of science fairs and coordinated with the National Science Fair to establish a local affiliated fair. With the sponsorship of the Patriot-News, the first fair was held at the Zembo Mosque with over 450 projects from students from 50 schools in seven counties. After undergoing several transformations, most recently in 2007 when the Patriot-News relinquished sponsorship, the Capital Area Science and Engineering Fair was formed in partnership with local Higher Education Institutions and businesses has grown to provide the International Science and Engineering Fair affiliated opportunity to public and private school students in grades 7-12 in 37 counties. A Young Scholars program was added in 2023 for students in grades 5 and 6. These students are invited to participate in the fair and be judged for placement awards.



Society for Science & the Public

CASEF MISSION STATEMENT: Our Mission is to inspire a greater interest in STEM (Science Technology Engineering Math) studies and encourage students to conduct creative research with the opportunity to present their projects for evaluation by the professional STEM community.

CASEF VISION: The Capital Area Science and Engineering Fair will serve as the venue to:

- Connect bright and motivated young scientists with this region’s industry, academia and professional organizations to promote economic development within Central Pennsylvania
- Encourage young scientists to find solutions to life’s greatest challenges and prepare a healthy and sustainable future.
- Introduce students to the science and technology opportunities within our region will facilitate the cultivation and retention of a tremendous resource – our youth.

Revised 7/2023

CONTACT US

CASEF Web: www.casef.org

Fair Director: director@casef.org

Registration: <https://casef.stemwizard.com>

Young Scholars Registration: <https://casefys.stemwizard.com>

OFFICE ADDRESS

Penn State Harrisburg
202 Church Hall
777 W. Harrisburg Pike
Middletown PA 17057

MAILING ADDRESS

CASEF C/O KNOWLES
103 Newport Road
Duncannon PA 17020

CASEF 2023-2024 Board of Directors

Raz Abdulqadir – BMS Program, Penn State College of Medicine
Marie-Louise Abrams – Director International Programs & External Affairs, Penn State Harrisburg
Kathryn Armstrong – Retired, Central Dauphin School District
Michelle Banks, Retired Teacher - St. Theresa School New Cumberland
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Indira Purushothaman – Formerly PSU College of Medicine Anatomy Laboratory
Timothy Ritter, **consultant**– Retired Cumberland Valley School District, Former Fair Director
Lauren Schaller – Teacher – Dauphin County Technical School
Adam Walter, **CASEF Treasurer** - Director Military & Veteran Affairs, HACC, Central Pennsylvania's Community College
Desiree Weaver – Mid Penn Bank

Valerie Knowles –Fair Director

We welcome new board members. The board meets six times a year. This is where general business, policy and decisions are made. Please consider serving. To become involved, send an email stating your interest to the fair director at director@casef.org

WAYS TO SUPPORT CASEF

United Way – specify on Pledge Form
Facebook – Follow CASEF– Network for Good & Birthday Donations
Individual Donations via www.casef.org
Special Award provider
Business/Corporate Partner or Sponsor – EITC Innovative Educational Program for tax credit

PARTICIPATION REQUIREMENTS

Registration Fees: \$50 per eligible grade per building up to 10 projects – additional projects \$15 each
Commitment to provide TWO judges from each school for judging day
Provide ONE volunteer from each school to help with the fair activities
Meeting all established deadlines.
EITC Letter of support from public schools – see website for sample letter.

VOLUNTEER OPPORTUNITIES

Category Selection Committee – review paperwork and determine accepted fair entries

Fair Certification – check in projects at fair

Young Scholars Judge – interview grade 5 and 6 participants on certification night

Judging – serve as a judge on fair day.

Special Award Provider – Provide a special award on a topic or criteria of your choosing (recycling, artistic display, best use of photography, any area that is of special interest to you or an organization or business)

CASEF Board – serves the organization by making financial policy and governing decisions.

Mentor – be a resource for a new teacher and help work through paperwork process.

CASEF Committee – Development – fund raising, EITC business donations, grant writing.

Judging and Special Awards – recruit judges and special award providers, greet and help on fair day.

Category Selection – selecting the projects for fair and determining rule compliance.

Technology and outreach – updating social media and recruitment of new school participants.

Fair – planning, logistics, fair day activities, ceremony help, and clean up.

Advocate – Do you know a potential judge, sponsor or special award provider? Please forward contact to director@casef.org

Registration Supported by



GlowTouch | Putting People First

C: 1-304-552-0387

glowtouch.com | Zach.gore@glowtouch.com

9931 Corporate Campus Dr., Suite 1400, Louisville, KY 40223

THANK YOU, PARTNERS & SPONSORS



JOHN CRAIN KUNKEL FOUNDATION



2023-2024 Calendar

October 17	4:30pm – Fall Teacher Meeting ZOOM Young Scholars first 15 minutes
November 21	Deadline for SRC Prior Approval Requests*
December 9	All prior approval corrections/omissions due.
January 10	FINAL Deadline for ALL student project entries into STEMWIZARD
January 16	School Registration and fees due AND Inventory Forms due with rankings. FINAL deadline for sponsor review of STEMWIZARD entries
January 20	Category Selection Committee
January 23	emails re: omissions/corrections and failure to qualify.
January 25	11:59pm ePOSTMARK DEADLINE for corrections/omissions NO EXTENSIONS OR EXCEPTIONS
February 10	Project numbers assigned by this date.
February 13	Extra project registration fees due
February 26	11:59pm Release to Judges Milestone complete with active video link.
February 28	Projects released to the judges.

Join The CASEF Fall Teacher Meeting
<https://hbgsd.zoom.us/j/86443129079?pwd=dEx3dIF0dFBYm0czdDBXUkNrVWdJdz09>

Fair Week – March 4-7

Sunday – table and clipboard set up.

Monday – Student certification 4-7pm - Young Scholar (grades 5 & 6) judging **WE NEED HELP THIS EVENING**
Students must bring hard copies of the Exhibitor Entry Form (with abstract) and PSU/Insurance Waiver

Tuesday – Judging with interviews.

Tuesday by 6 pm grand champion call-back notifications

Wednesday- 9 to 12:30 Grand Champion Judging by appointment

Wednesday and Thursday open to public 8 am – 6pm

Thursday 6:30pm Award Ceremony - Remove displays prior to ceremony.

Friday – Clean up

May 12-17 ISEF Los Angeles, CA

YOUNG SCHOLARS CALENDAR

October 17 4:30pm – Fall Teacher Meeting ZOOM

January 10 Registration

January 16 Fees due

March 4 4 - 7pm Set up and Judging.

March 7 Award Ceremony

BOARD MEETINGS* MONDAYS 4:30pm Camp Hill HS

** December, April as needed*

November 20

*December 18

January 23

February 12

March 20

*April 15

May 20

July 16 – Retreat

Committee meetings scheduled as needed.

STEMWIZARD



Teachers can see student entries and are expected to check for legibility, signatures and completeness (5 bib resources, pre- abstract, signatures) Please make sure uploaded forms are completely visible, especially signature lines.

Teachers will need to register or update information in STEMWIZARD <https://casef.stemwizard.com>

- Click on REGISTRATION (upper right corner) for new teachers. LOG IN for returning teachers
- Choose TEACHER
- Complete registration information*, an automatic email will be sent to fair admin for approval
- Once account has been activated, then log into your account by clicking on Login-> Teacher and entering your login credentials*
- You will see a dashboard showing summary information about your students
- You can also click on the Student Management option on the left navigation menu to see a list of your students where you can use the Action drop-down to log in as your student to help them prepare for the fair. You can upload forms but you cannot use the photo app in this menu – but you can upload a saved photo or pdf

NOTE TEAM PROJECTS MUST BE REGISTERED TOGETHER, INDIVIDUALS CANNOT BE COMBINED

*Record your password

MAKE SURE YOUR STUDENTS USE THE TEACHER NAME YOU REGISTER

Each team member needs to submit an individual Form 1B

ALL projects need:

Checklist for Adult Sponsor (1)

Student Checklist (1A)

Approval Form (1B)

*Risk Assessment (3)

Research Plan that includes – Follow Form 1 format:

Title

Problem Statement/Hypothesis

Materials List and Procedure*

Anticipated Data Analysis Method**

BIBLIOGRAPHY – minimum 5 resources

REMINDER – The CASEF website has screencasts to take you through each form.

***DO NOT FILL OUT “N/A” or “none” Use “minimal risk.”** Students need to state any risk, even if minimal and explain how risk will be mitigated. Minimal risk examples: - eyestrain - take a break from activity or papercut- treat wound. MARI and CERT projects have a SEPARATE evaluation tool to determine risk. Projects will be rejected if responses are “n/a” or “none” on Form 3.

* If the project involves a survey a copy must be either uploaded or included with their procedure

** Survey projects are REQUIRED to have statistical analysis -see Survey Project Policy

REQUIRED AT CHECK-IN

EXHIBIT IDENTIFICATION/PROJECT FINAL ABSTRACT Form and PSU Media Release and Insurance Waiver– **HARD COPIES ARE REQUIRED TO SET UP PROJECT.**

The Penn State Harrisburg Release must be unaltered and signed. The Exhibit Identification/Project Final Abstract forms can be found on the CASEF website.

ALL FORMS MUST BE UPLOADED

<https://casef.stemwizard.com>

Students will need to get parent, teacher, qualified scientists, human participant, and IRB signatures. Sponsors and parents will be cc'd on all student email sent through Stem Wizard. ***PLEASE MAKE SURE EMAIL ADDRESSES THAT ARE REGULARLY MONITORED ARE REGISTERED IN STEMWIZARD.***

Sponsors are required to keep a hard copy file for all participants.

NOTE

REGISTRATION IS NOT COMPLETE UNTIL THE
TEACHER INVENTORY FORM IS SUBMITTED VIA EMAIL TO director@casef.org

NOTE

Grand Champion Finalists MUST SUBMIT original hard copies of all forms to grand champion judging.

CASEF FORMS

Please use 2024 ISEF and CASEF forms. For your convenience, School Registration, Invoice, Teacher Inventory, Exhibit Identification/Project Final Abstract, Penn State Photo Release/Insurance Waiver, and Rubrics are available at www.casef.org

RESOURCES

The CASEF website www.casef.org has an extensive list of teacher resources.

The **State Library of Pennsylvania STEMLab (formerly the Maker Space)** has an extensive list of resources for project ideas and has many lab materials for classroom and project use. These are available **FREE** with a library card or school power library subscription. ***Students will not be able to work in the STEMLab.*** The STEMLab offers professional development for teachers and will loan equipment to students via the Power Library System. The STEMLab is in transition and relocation and will be available to users in November 2024. Please reach out to Willam Fee, Lead Instructor, STEMLab, State Library of Pennsylvania | Pennsylvania Department of Education. WFee@pa.gov or [State Library of Pennsylvania \(exlibrisgroup.com\)](http://StateLibraryofPennsylvania(exlibrisgroup.com))

The **Pennsylvania Society for Biomedical Research** has fruit fly, zebra fish and rodent experiments available at minimal cost. They also have a great supply of classroom resources available upon request. Please visit <https://www.psbr.org/> for more information.

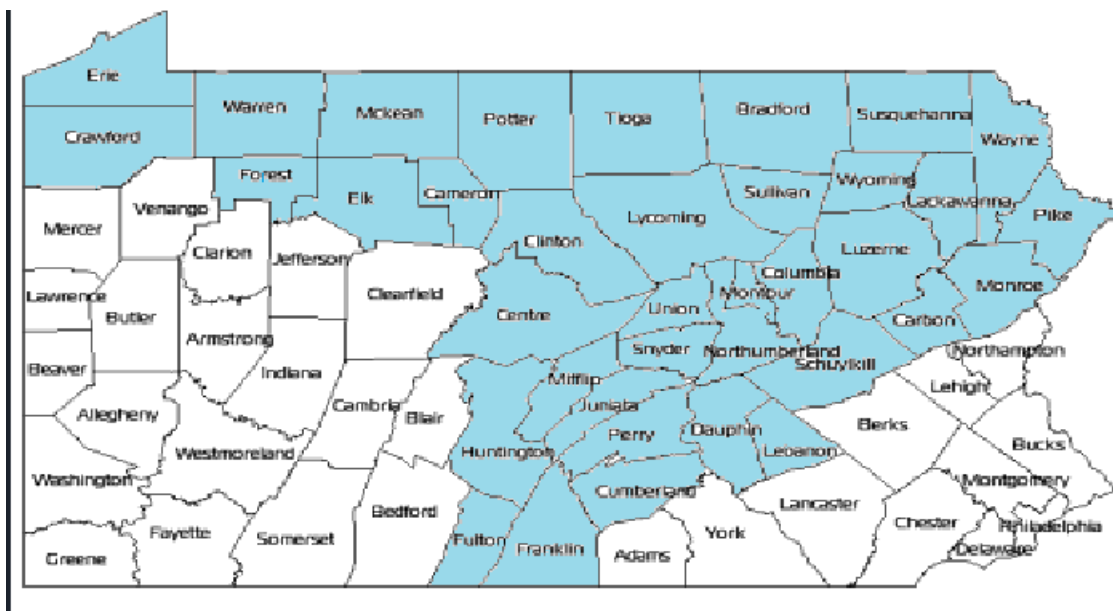
CSATS Center for Science and the School PSU College of Education <https://csats.psu.edu>

Penn State Environ Mentors - In the EnvironMentors program, both Undergraduate/Graduate and high school students are paired with faculty mentors that supervise, lead, and direct their research. The undergraduate/graduate mentor's role is to be a mentor that the high students can come to with questions about college life and experiences. Through mentorship, we hope that healthy, positive, and impactful relationships are established within research groups.

[Penn State Environ Mentors – Engaging underrepresented students and changing the narrative in STEM \(psu.edu\)](http://PennStateEnvironMentors-EngagingunderrepresentedstudentsandchangingthenarrativeinSTEM(psu.edu))

Science in Motion is a consortium of eleven colleges and universities providing laboratory science equipment and activities at no cost to over 200 school districts in the commonwealth. Please check out the offerings for your specific territory at: <http://www.education.pa.gov/Teachers%20-%20Administrators/Curriculum/Pages/Science-Education.aspx>

OUR SERVICE AREA



Award and Team Project Policy

1. Any corrections or omissions must be reported within 10 days of the award ceremony.
2. Awards are given to the PROJECT not individuals. For team projects:
 - a. ONE copy of Certificate will list all registered names of team members. Schools may make additional copies.
 - b. For any monetary award the check will be written to first team member listed. It will be up to sponsor and team member receiving the check to disperse funds equally among team members.
 - c. For any other type of award, ONE will be awarded to the PROJECT.
 - d. Partnerships with students outside our geographic service area require CASEF permission to participate and MUST be sponsored by the school of the partner within our service area.
3. Awards for participants not attending the ceremony:
 - a. No one other than the student may pick up awards at the ceremony.
 - b. There will be TWO announced opportunities to pick up awards the week following the fair. *
 - e. Paper awards (certificates, checks) and any other awards (backpacks, framed certificates, t-shirts, books, etc. INCLUDING MEDALLIONS) will be available for pick up at the designated times or by appointment within 10 days of the fair. They will NOT be mailed.
4. Anything not picked up or requested corrections not made within 10 days will be forfeited.
5. Any award that is an invitation to another competition is at the expense of the winner(s) and his/her/their school.
6. If a TEAM project is selected for ISEF - CASEF will pay the equivalent of ONE participant – the other team members may attend ISEF, however, they MUST be part of the CASEF official party, follow all CASEF protocol and travel with the group. The team members must forward funds for the determined amount of the anticipated added expense prior to ISEF for the additional team members to attend.

Note: ISEF rules state that a team project may NOT be entered as an individual project, but ONE team member May represent the entire team.
7. All checks should be cashed no later than June 1. Checks may not be honored, and the funds considered a donation to the CASEF general fund or returned to the provider.

***Please designate ONE representative from the school to pick up ALL awards. AWARD PICK UP DATES WILL BE ANNOUNCED VIA STEMWIZARD EMAIL.**

Approved 7/2023

REGISTRATION FEE POLICY

1. Registration fees must be paid prior to participation. Students from schools who have not made payment will be disqualified and any award(s) rescinded.
2. Registration fees provided by donors will not be recognized as payment if school fails to meet published deadlines.

The recipient school(s) will become responsible for registration fee(s). **IF** a deadline extension is granted, a signed, written acknowledgement by school administration of a deadline extension, fee responsibility and payment will be required for reinstatement.
3. Donated registration fees will be applied to general operations or returned to donor.
4. Registration fees are non-refundable and will not be carried over for future participation.
5. Paid registration fees are NOT a guaranteed acceptance and/or participation. If deadlines are missed and/or participation status changes due to failure to comply with participation rules and requirements, the registration fees may be forfeited.

Approved 7/2023

Students who disrupt the judging process may be disqualified from CASEF. Judges will report the disruptions to CASEF using the form below. Sponsors will be notified to remove the student from judging and any award(s) will be forfeited.

Judging Infraction Report

Student Project Number _____

Infraction: Disruptive
Disrespectful
Failure to comply with request

Judge's Number _____

CATEGORIES

LIFE Life Science – animals, plants, genetics, environmental science

CHEM Chemistry – inorganic, organic, and qualitative and quantitative chemical testing

PHYS Physical Science – physics, energy, transportation, material science, geology, astronomy

SOBE Social/Behavioral Science – sociology and psychology

MEHE Medicine & Health – microbiology, cellular/molecular biology, epidemiology, biochemistry, biomedical engineering

ENVR Environmental – environmental science topics, pollution, water quality, sustainability

CERT (formerly TEEM) Computer, Engineering, Robotics, and Technology.
computer hardware, robotics, software, and engineering (design, build and test)

MARI Math, Research-based, and Informatics (tech applications) -research projects that are not based on traditional experimentation or engineering design. Mathematic projects, data driven research, and applications of existing technology, software, and mathematical models.

SEE WEBSITE FOR NEW RUBRIC.

-The top two (2) projects will be awarded best in category scholarships.

-Some projects will fit into multiple categories. The category should be determined by what is being measured to formulate the conclusion.

Approved 7/2023

NEW

SURVEY PROJECT POLICY

In order substantiate the integrity of a research project that obtains data collection via published or original surveys and questionnaires, our judges and SRC have suggested some parameters for this type of research:

If the project involves an original survey, a minimum of 100 (Sr.) and 50 (Jr.) data points –NOT Participants - are required.

If the project uses a published survey, a minimum of 400 (Sr.) and 250 (Jr.) data points – NOT Participants - are required.

These projects are also required to have some form of statistical analysis to determine confidence level.

A COPY OF THE SURVEY MUST BE INCLUDED WITH THE RESEARCH PLAN

Approved 7/18

Non-Traditional School Participant Policy

1. Students enrolled in cyber schools must reside in the CASEF service area.
2. The student must be no older than 20 yrs. old by May 1st of the fair year.
3. The student will be entered in the grade level for which they are completing 51% or more of the enrolled curriculum for the current school year. *The 51% is based on the following ratios: Math 25%, Science 25%, Social Studies/History 20%, English/Language Arts 20%, Requirements/Electives 10% (physical education, foreign language, technical education, art, music, etc.)*
4. Students who are completing less than 51% of accelerated curriculum will be entered in the appropriate grade level for biological age. *Biological age/grades: 12th grade – ages 17-20, 11th grade – ages 16/17, 10th grade- ages 15/16, 9th grade – ages 14/15, 8th grade – ages 13/14, 7th grade – ages 12/13, 6th grade – ages 11/12, and 5th grade 10/11. Students entering the Young Scholars Program will follow the biological ages of grade 5 10/11 and grade 6 11/12. Students working at accelerated levels will not be permitted to enter the junior division until they are the appropriate biological age and grade level.*
6. Participants requesting participation based on accelerated grade level may be required to submit additional supporting documentation from the sponsoring school. (Birth certificate, academic verification record to support accelerated curriculum or parental/sponsor letter of support).
7. Final grade level for participation will be determined by CASEF executive officers. However, a student has a maximum of 6 years eligibility for participation for scholarships and special awards in the CASEF grades 7 through 12 programs.
8. Students under the age of 14 who become eligible for ISEF must be accompanied by a parent or guardian at their own expense.

Approved 7/2023

2024 RULE SUMMARY

1. **REVIEW Disqualification at Category Selection:** The category review committee volunteers spend many hours reviewing the projects. The committee has provided extra time for sponsors to review the project entries prior to the category selection meeting. This review process is to verify the entries are complete, the forms are signed, and the required information is included in the entry. This process also includes deactivating students who are not participating from STEMWIZARD. The students should be ranked on the inventory sheet (up to 10 projects) and should have complete entries. Additional projects may be added as space permits at the cost of \$15 per project.

Student projects may be disqualified for the following infractions:

Incomplete research plan – including 5 resources, survey copy if required, and disposal plan when appropriate.

Incomplete forms 1, 1A, 1B, and 3 (required for ALL project) NOTE: Form 3 risk assessment answers are not “n/a” or none.” Answers should be minimal risk and state SOME way to mitigate risks (participant may withdraw from study.) The student needs to state the risk and mitigation, even if minimal. Example: eyestrain – take a break from activity or papercut – treat wound.

Form 4 all boxes are checked, and signatures obtained BEFORE start of project.

Human subject projects have informed consent form – SEE #8

All forms are signed, and parent contact information is complete.

STEMWIZARD entries are complete and all required information is included with each milestone.

IRB or SRC dates and signatures are BEFORE research begins.

Project titles are less than 85 characters (including spaces) and grammatically correct.

*The teacher inventory ranks the projects with number 1 as the strongest and number 10 as the least competitive**

**competitive is determined by: original thought, thorough design, supported by background research, adequate data collection, conclusion based on data analysis, real world application - “How do you know? Who says? Who cares?”*

2. All participating schools (districts) must form an Institutional Review Board (IRB). The IRB needs a minimum of 3 persons, one of whom is an administrator (prefer principal or vice-principal, but a curriculum supervisor, if considered administration by district, may fill this requirement, medical or mental health professional (school nurse, counselor, psychologist) and an educator who is NOT the sponsor of the research project. Federal Regulation (45-CFR-46) require LOCAL evaluation of potential physical and/or psychological risk. *NO Adult Sponsor, parent or relative of student, the Qualified Scientist or Designated Supervisor who oversees a project may serve on the IRB that reviews that project. See page 24.*
3. Use current ISEF forms. They are in STEMWIZARD or can be accessed at <https://www.societyforscience.org/isef/forms/> be careful to ensure all signatures are obtained in the correct places.
4. ALL projects need a risk assessment (Form 3) Engineering projects have a different risk assessment guide. The questions cannot be answered with “n/a” or “no risk.” The answer can be “minimal risk” but must include a description of the risk AND a way to mitigate the risk (may choose not finish study.) Rule Book <https://student.societyforscience.org/intel-isef-forms>
5. Human projects must include Form 4 INCLUDING Page 2 and a sample of the CONSENT form.
6. Human projects that test a student-designed invention, prototype, computer application, or engineering/design project that collects personal preference data and pose minimal health or safety risks OR projects in which the student is the subject of his/her own project and does not involve more than minimal risk can be approved by the IRB. **NEW: The student may have ONE adult test a prototype without any additional forms.**
7. **More than minimal risk includes ingestion, exercise, intervention testing, surveys that determine gender, divorce, drug/alcohol use, controlled substances, risky behavior (sex, daredevil stunts, driving, etc.), emotional stress (divorce, bullying, etc.) Any data collection process that requires a medical license (blood pressure, respiration, pulse, lab work, culture, DNA extraction) must be done with a Designated Supervisor (DS) or Qualified Scientist (QS.) These may be approved by IRB – SEE DETERMING RISK**
8. Grocery Store items (mushrooms, bakers/brewer’s yeast. *Lactobacillus, Bacillus thuringiensis* and naturally occurring nitrogen-fixing, oil-eating and algae-eating bacteria IN THEIR NATURAL ENVIRONMENT are exempt from potential pathogen and SRC approval IF **CULTURED, SRC approval is required and a disposal plan must be included.**

9. Studies involving mold growth on food MUST be approved by SRC and done in an approved laboratory setting. The research plan must include a method to PROPERLY disposed of samples at first sign of mold and **NOT** cultured.
10. Studies using *E. coli* k-12 can be done in a CASEF SRC approved BSL-2 school laboratory.
11. Vertebrate studies that show stress, adverse outcome or death must be stopped, evaluated, and then resumed to minimize further damage or death. Exposure to toxins is prohibited. **NOTE:** Any signs of stress including a maximum body weight loss of 15% or more must be stopped, evaluated and animal recovery plan begun. **ALL vertebrate studies are required to have a Body Conditioning Score (BCS) appropriate for the species and must be included in the research plan and regularly monitored and recorded in the journal. SEE DETERMING RISK**
12. **ALL** rDNA modifications or other genome editing MUST BE DONE in a BSL-2 approved lab. ALL genome editing projects must include a disposal plan. Some commercial kits can be used in a BSL-1 lab if conducted within the ISEF rules. Please consult SRC before beginning this type of project to avoid potential disqualification.
13. Genetic Studies such as 23 & Me, Ancestry.com, etc. that predict medical conditions and genetic lines that are federally regulated are prohibited.
14. BSL -3 and BSL-4 biological agents are prohibited. This includes resistant strains and/or strains that may produce serious/exotic/dangerous diseases, COVID-19, or resistant organisms.
15. Screencasts for each form are available on the CASEF website. Please refer to this resource when completing forms.

Link to ISEF Rules Wizard: <https://apps2.societyforscience.org/wizard/index.asp>

Complete Rule Book: <https://student.societyforscience.org/international-rules-pre-college-science-research>

Forms: <https://student.societyforscience.org/overview-forms-and-dates>

SRC APPROVAL NEEDED FOR ALL Microbiology CONDUCTED AT A RRI, PHBM, Vertebrate and Human* Participant Projects. – All School BSL-2 Labs must be toured (physically or virtually by CASEF SRC. SURVEYS MUST BE INCLUDED FOR APPROVAL – Topics cannot pose psychological stress or risk. NO COMMERCIAL DNA TESTING or TESTING THAT PERFORMS A MEDICAL DIAGNOSIS.

*** SRC when IRB cannot determine risk and approved**

SPECIALIZED ISEF FORMS

(1C) Regulated Research/Institutional Setting – for projects not competed at home or school – must be accompanied by letterhead permission from INSTITUTION management – NOT Qualified Scientist

(2) Qualified Scientist – may be needed for projects that have human participants, vertebrate animals, potentially hazardous biological agents (including microbes) and DEA-controlled substances.

(3) Risk Assessment – required for ALL projects

NOTE: ALL ENGINEERING PROJECTS NEED RISK ASSESSMENT.

(4) Human Participants - ALL projects that use human participants

Human Informed Consent - required for all actively participating humans – a classroom form may be completed by supervising teacher for class participation

(5A) Vertebrate Animal – ALL non-exempt projects conducted at home/school/field research site

NOTE: A Body Condition Score (BCS) is REQUIRED in research plan for all vertebrates

(5B) Vertebrate Animal – for projects conducted in a Regulated Research Institution

(6A) Potentially Hazardous Biological Agents Risk Assessment - needed for microorganisms, rDNA, fresh/frozen tissues (including primary cell lines, human and other primate established cell lines and tissue cultures), blood, blood products and body fluids. MUST include source and disposal.

(6B) Human and Vertebrate Animal Tissue – for projects that use fresh/frozen tissues (including primary cell lines, human and other primate established cell lines and tissue cultures), blood, blood products and body fluids. **MUST** include source and disposal.

(7) Continuation/Research Progression – Required for projects that are a continuation/progression in the same field of study as a previous project. **NOTE:** The previous year's abstract and the original prior research plan(s) must be included with this form.

Projects that use human participants, vertebrate animals (zebra fish exempt), potential pathogens, and hazardous materials or devices **MAY** need prior approval.

ALL STUDENTS IN GRADES 7 -12 may conduct microbiology projects but must be sure to follow all CASEF and ISEF protocols AND have SRC approval prior to the start of the project. PLEASE be advised of the many rule changes and BSL-2 laboratory requirements.

POTENTIALLY HAZARDOUS BIOLOGICAL AGENTS

- 1) The following types of studies are exempt from prior SRC review,
 - a. Studies involving baker's yeast and brewer's yeast, except in rDNA studies.
 - b. Studies involving Lactobacillus, Bacillus thuringiensis, nitrogen-fixing, oil-eating bacteria, and algae-eating bacteria introduced into their natural environment. (Not exempt if cultured in a petri dish environment.)
 - c. Studies involving water or soil not concentrated in media conducive to their growth (please review all rules below to ensure that there are not more specific rules that may apply).
 - d. Studies of mold growth on food items if the experiment is terminated at the first evidence of mold.
 - e. Studies of mushrooms and slime molds.
 - f. Studies involving E. coli k-12 which are done at school and are not rDNA studies.
 - g. Studies involving protists, archaea and similar microorganisms.
 - h. Research using manure for composting, fuel production, or other non-culturing experiments.
 - i. Commercially-available color change coliform water test kits. Kits must remain sealed and properly disposed.
 - j. Studies involving decomposition of vertebrate organisms (such as in forensic projects).
 - k. Studies with microbial fuel cells.

TISSUES

- 1) The following types of tissue do not need to be treated as potentially hazardous biological agents:
 - a. Plant tissue
 - b. Plant and non-primate established cell lines and tissue culture collections (e.g., obtained from the American Type Culture Collection). The source and/or catalog number of cultures must be identified in the Research Plan.
 - c. Fresh or frozen meat, meat by-products, pasteurized milk or eggs obtained from food stores, restaurants, or packing houses.
 - d. Hair, hooves, nails and feathers.
 - e. Teeth that have been sterilized to kill any blood- borne pathogen that may be present. Chemical disinfection or autoclaving at 121 degrees Celsius for 20 minutes is recommended.
 - f. Fossilized tissue or archeological specimens.
 - g. Prepared fixed tissue.

HUMANS

Some studies involving humans are exempt from IRB pre-approval or additional human participant forms. Exempt projects for the Intel ISEF and affiliated fairs are:

1. Testing of a student-designed invention or prototype is done only by the student researcher and where the testing does not pose a health or safety hazard. **ONE adult may also test the device without extended Human Participant forms.** A Risk Assessment Form (3) must be completed. (The use of other human participants for this testing is not exempt from IRB review and approval.)
2. Data/record review studies (e.g., baseball statistics, crime statistics) in which the data are taken from preexisting data sets that are publicly available and/or published and do not involve any interaction with humans or the collection of any data from a human participant for the purpose of the student's research project.
3. Behavioral observations of unrestricted, public settings (e.g., shopping mall, park) in which all of the following apply:
 - a. the researcher has no interaction with the individuals being observed
 - b. the researcher does not manipulate the environment in any way and
 - c. the researcher does not record any personally identifiable data.
4. Projects in which the student receives pre-existing/retrospective data in a de-identified/anonymous format which complies with both of the following conditions:
 - a. the professional providing the data certifies in writing that the data have been appropriately de-identified before being given to the student researcher and are in compliance with all privacy and HIPAA laws, and
 - b. the affiliated fair SRC ensures that the data were appropriately de-identified by review of the written documentation provided by the supervising adult(s).

VERTEBRATES

Studies involving behavioral observations of animals are exempt from prior SRC review if ALL of the following apply:

- a. There is no interaction with the animals being observed,
- b. There is no manipulation of the animal environment in any way, and
- c. The study meets all federal and state agriculture, fish, game and wildlife laws and regulations

IF THE PROJECT IS NOT IN THE EXEMPT STATUS – THEN IT WILL NEED PRIOR APPROVAL BEFORE BEGINNING EXPERIMENTATION. IRB ASSUMES ALL RISKS AND MUST COMPLETE ALL PAPERWORK WITH APPROPRIATE SIGNATURES

NOTE

PRIOR APPROVAL & DETERMINING RISK

If the project does not fall under an exemption, students must submit ALL of the appropriate paperwork AND have the project approved PRIOR to starting their projects. There are 2 ways to obtain prior approval. Your district must form an IRB (Institutional Review Board) for first review and then move on to CASEF SRC for projects that cannot be approved by the IRB.

IRB – Your institutional review board needs to consist of at least a non-sponsoring teacher, administrator and a medical or mental health professional. The committee should review the proposed project and determine what, if any, risk factors are present and what means are in place to reduce the risk. Projects that involve HUMAN participants must have Form 4 and Human Informed Consent Form completed and approved prior to the start of the experiment. Projects that cannot be approved by the IRB should be forwarded to the SRC for approval. Projects that are conducted at research institutions with a qualified scientist must have the appropriate paperwork and signatures in lieu of SRC approval. **Signatures needed on Form 1B 2A and Form 4. These signatures are obtained electronically through STEMWIZARD. The student will need to know the email address(es) of the person(s) who need to sign the forms. It is recommended that the sponsor complete the check box section and then email the form to the various IRB members.. It may be necessary to remind the IRB members to look for the form so that it is not lost or in a “junk” file.**

Please try to use the electronic signature feature, but we will allow the form to be uploaded in the additional document space if signatures are collected during the IRB meeting.

SRC – The Scientific Review Committee is our review committee. **All** paperwork must be completed and submitted prior to established deadlines. NO work can begin until approval is obtained. Projects that cannot be approved by the IRB should submit the project and necessary paperwork to the CASEF SRC (Scientific Review Committee) by the established deadline and BEFORE experimentation begins.

HUMANS

Minimal risk: *the probability of harm or discomfort anticipated in the research is not greater (in and of themselves) than those ordinarily encountered in everyday life or during performance of routine physical or psychological examinations or tests– use human to test a device (brand of pen to color)*

- IRB approval
- Must have Form 4

Greater than Minimal Risk: PHYSICAL: *exercise, ingestion, tasting, smelling application of substances, exposure to potentially hazardous materials Examples: taste testing, respiration, heart rate A medical professional DS or QS must collect the medical information, the student is not permitted to collect heart rate, respiration, blood pressure, etc. without immediate supervision to recognize any unusual anomalies.*

PSYCHOLOGICAL: *survey, questionnaire, viewing of stimuli, experimental condition that could potentially result in emotional stress. Examples: questions relating to personal experiences such as abuse, divorce, depression, anxiety, violence or viewing distressing images.*

ANY project that has privacy concerns or cannot protect confidentiality including participants in risk groups (pregnant, physically/emotional/developmentally disadvantaged, or identified with a specific disease/disorder) or federally protected group (prisoners, minors, or disabled) cannot be approved by IRB or SRC.

NOTE

IRB can only approve minimal risk projects

VERTEBRATE

IRB can approve studies in which there is no interaction with animal being observed, no manipulation of environment, and study meets federal and state agriculture, fish, game and wildlife laws and regulations.

Projects that use vertebrates should be reviewed using the “Four R” method.

REPLACE – Can the vertebrate be replaced with invertebrate, tissues or cell cultures?

REDUCE – Can the number of animals be reduced without compromising the statistical validity?

REFINE – Can the experimental protocol be modified to minimize pain or distress?

RESPECT – Does the project respect the animals and their contribution to research?

The research plan needs to justify why animals must be used including the choice of species, sources of animals, complete experimental design including ways to reduce stress and Body Condition Score (BCS), and disposal plan.

HAZARDOUS MATERIALS

Careful consideration should be given to DEA controlled substances, prescription drugs, alcohol and tobacco, firearms and explosives, regulated drones and radiation. Potentially Hazardous Biological Materials (PHBM) include BSL-2 organisms, rDNA technologies, pathogens and unknown or resistant organisms, human or animal waste, body fluids, blood, blood products or tissues.

DISQUALIFICATION CRITERIA

1. Incomplete Research Plan with 5 resources and/or failure to include copies of any surveys used in the project.
2. Incomplete or unsigned forms
3. Failure to complete all of the STEMWIZARD milestones.
4. Form 4 with missing information and/or signatures.
5. Form 3 – Risk Assessment form submitted with “none” or “n/a” answers.
6. Experimentation that does not fall within the submitted start and end dates.
7. Omitting SRC approval for Human, Vertebrate, or Potentially Hazardous Biological Materials, including ALL microbiology projects.
8. Any project that cultures microorganisms, mold, fungi, or other non-exempt organisms in a BSL-1, classroom, or home, or non-approved environment.
9. Failure to use an RRI or APPROVED BSL-2 laboratory when required.
10. Failure to comply with SRC requested changes.
11. Failure to meet deadlines.
12. Omission of registration forms and/or payment
13. Requests for exemption from CASEF or SRC rules and guidelines
14. Academic fraud, lack of integrity in research, or plagiarism
15. Failure to set up and be certified.
16. Survey projects without the required statistical analysis
17. Display boards that do not follow the outlined requirements on the Exhibitor Information Form.
18. Circumstances deemed unacceptable by the CASEF board of directors.

HARD COPY PAPERWORK

GRAND CHAMPION FINALISTS MUST SUBMIT ORIGINAL COPIES FOR GRAND CHAMPION JUDGING

Journals must be handwritten for grand champion consideration

Sponsors are required to keep all original paperwork for each participant. ONLY ITEMS WITH * SHOULD BE STAPLED IF MORE THAN ONE PAGE. Should CASEF request hard copies, please submit in the following order.

DISPLAY RULES

Displays will be required as the background for the video presentation that may ONLY replace the in-person interviews in the event the in-person portion of the fair is canceled. Students who are more than 100 miles away may schedule a ZOOM interview. Projects that do not follow the guidelines and/or fail to pass the checklist will be disqualified. Video link must be submitted in STEMWIZARD in the project final abstract and should be an UNLISTED YouTube presentation or Google Drive video. Video links that do not work may disqualify the project from judging.

Guidelines for the displays can be found on the CASEF web page www.casef.org

The check list can be found at

<https://static1.squarespace.com/static/5d85685737731676556636a4/t/5ddae41da46d122f38319e2a/1574626333584/2018+Summary+and+checklist.pdf>

ALL projects must fit into 36 LINEAR inches of table top space.

Creative titles are encouraged, but a subtitle should explain what the project investigates.

The PRE-ABSTRACT contains the problem, hypothesis, procedure description, and anticipated results. MAXIMUM 250 words. MUST BE SUBMITTED IN STEMWIZARD.

The FINAL ABSTRACT contains the problem statement, hypothesis, procedure description, and conclusion statement. MAXIMUM 250 words.

NOTE: The Final Abstract should NOT reference prior projects – only current year's research.

Students ***MUST*** bring a hard copy the Exhibit Identification/Project Final Abstract and Media Release Form with them to set up. NO FORM – NO ADMISSION. We will not be collecting nor printing these prior to or at set up.

A copy of the research paper should be included with the display. It is suggested the research paper be written in third person, passive voice and follow APA format. HOWEVER, we will accept the school research paper format. Please discourage use of first (I) and second (you) person.

The Display should have a consistent font type and size and should not be taller than 6ft. Remember, the judges have to be able to read what is displayed. All Tables and Figures should be identified and captioned. All photographs and diagram sources need to be cited.

Projects not set up and certified during the assigned times will be removed and disqualified from the fair.

* JOURNALS

Student journals are 15% of the score. They should be dated and completed in blue or black ink and part of the display materials. No names should be visible on journals. Electronic journals are permitted BUT a handwritten journal is mandated for grand champion consideration. The handwritten journal may contain printed and inserted electronic data.

NOTE: Journals are documents that show original thought and practice. They are only legally recognized when handwritten. It is permissible to enter /add electronic data or research to the journal, but the procedure and observations should be handwritten, dated and signed to be a legal document.

Please review the list of things that CANNOT be displayed listed on the Exhibit Identification /Project Final Abstract Form.

FFA project format is acceptable, but must cover student name and school and include a log book

CASEF CODE OF CONDUCT AND HARRASMENT POLICY

Conduct in General:

Students, Parents, Sponsors, and School Districts are reminded that the code of conduct for the student's home school district is in effect during the student's participation in both CASEF and/or ISEF. It is expected that the sponsors and school districts will discipline the student according to that district's policy, if the student violates the code of conduct while at CASEF and/or ISEF. The student will be sent back to home or school and automatically forfeits any award or scholarship for which he/she may have been eligible.

Harassment in General

CASEF prohibits harassment of any kind against any student, volunteer, or employee by an adult, another student, volunteer, CASEF employee, or third party for any reason including, but is not limited to: age, national origin, race, color, religion, gender, sexual orientation, marital status, disability, ancestry, and/or veteran status. Harassment includes, but is not limited to: slurs, epithets, threats, derogatory comments, unwelcome jokes, and teasing.

Any student or other person who feels that he or she is a victim of such harassment at a CASEF program should promptly report the matter to a CASEF employee or other adult authority who must immediately present it to the proper CASEF authority. If a CASEF employee or adult volunteer becomes aware of such a situation, he or she is under the responsibility to report to the proper CASEF authority. Upon receipt of an allegation(s), an investigation will be initiated. All such reports will be handled as confidentially as possible. CASEF may take appropriate disciplinary action against any person found to have violated the harassment policy.

No adverse action or retaliation will be allowed to be taken against a person who reports a violation or who participates in an investigation of this policy in good faith. Knowingly false accusations are prohibited and will be treated by disciplinary action comparable to that which would be applied to actual misconduct.

Sexual Harassment

Sexual harassment of or by any person in attendance at a CASEF program is prohibited. Sexual harassment includes, but is not limited to: unwelcome sexual advances, requests for sexual favors, and/or verbal or physical conduct of a sexual nature including, but not limited to: drawings, pictures, jokes, teasing, or uninvited touching.

In accordance with this policy, unwelcome sexual advances, requests for sexual favors, sexual demands, or other verbal/physical conduct of a sexual nature will constitute sexual harassment when:

- The conduct has the purpose or effect of unreasonably interfering with an affected person's performance, or creating an intimidating, hostile, or offensive environment; or in third party situations, one or more individuals are reasonably offended by the sexual interaction, conduct, or communications between others.
- The conduct has the effect of creating actual, perceived, or potential conflicts of interest, favoritism, disruption, or lack of objectivity.

Any student or other person who feels that he or she is a victim of sexual harassment at a CASEF program should promptly report the matter to a CASEF employee or other Adult authority who must immediately present it to the proper CASEF authority.

If a CASEF employee or adult volunteer becomes aware of such a situation, he or she is under a responsibility to contact the proper authority. Upon receipt of an allegation(s), an investigation will be initiated. All such reports will be handled as confidentially as possible. CASEF may take appropriate disciplinary action against any person found to have violated the sexual harassment policy.

No adverse action or retaliation will be allowed to be taken against a person who reports a violation or who participates in and investigation of this policy in good faith. Knowingly false accusations are prohibited and will be treated by disciplinary action comparable to that which would be applied to actual misconduct.

Ethics Statement

Student researchers, as well as adults who have a role in their projects, are expected to maintain the highest ethical standards. These include, but are not limited to:

- **Integrity.** Honesty, objectivity, and avoidance of conflicts of interest are expected during every phase of the research. The project should reflect independent research done by the student(s), and represent only one year's work.
- **Legality.** Compliance with all federal, country, state and local laws is essential. All projects must be approved by a Scientific Review Committee (SRC), and when necessary must also be approved by an Institutional Review Board (IRB), Institutional Animal Care and Use Committee (IACUC), and/or Institutional Biosafety Committee (IBC).
- **Respect for Confidentiality and Intellectual Property.** Confidential communications, as well as patents, copyrights, and other forms of intellectual property must be honored. Unpublished data, methods, or results may not be used without permission, and credit must be given to all contributions to research.
- **Stewardship of the Environment.** It is the responsibility of the researcher(s) and the adults involved to protect the environment and its organisms from harm. All projects involve some amount of risk. Everyone is expected to recognize the hazards, assess the risks, minimize them, and prepare for emergencies.
- **Animal Care.** Proper care and respect must be given to vertebrate animals. The guiding principles for the use of animals in research includes the following "Four R's": Replace, Reduce, Refine, Respect.
- **Human Participant Protection.** The highest priority is the health and well-being of the student researcher(s) and human participants.
- **Potentially Hazardous Biological Agents (PHBAs).** It is the responsibility of the student and adults involved in the project to conduct and document a risk assessment, and to safely handle and dispose of organisms and materials.

Scientific fraud and misconduct are not condoned at any level of research or competition. This includes 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 competition in affiliated fairs and ISEF. Society for Science and the Public reserves the right to revoke recognition of a project subsequently found to have been fraudulent.

When you need to justify support for STEM experiences, these skills are learned and developed through STEM research projects.

The 10 Skills Employers Most Want

Here are the 10 skills employers say they seek, in order of importance. National Association of Colleges and Employers (NACE) gave each a rating on a 5-point scale, where 5 was extremely important, 4 was very important, 3 was somewhat important, etc.:

1. Ability to work in a team structure
2. Ability to make decisions and solve problems (tie)
3. Ability to communicate verbally with people inside and outside an organization
4. Ability to plan, organize and prioritize work
5. Ability to obtain and process information
6. Ability to analyze quantitative data
7. Technical knowledge related to the job
8. Proficiency with computer software programs
9. Ability to create and/or edit written reports
10. Ability to sell and influence others

<https://www.forbes>

NOTES

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Any additional changes will be posted in STEMWIZARD and/or the CASEF website.