

Central Sound Regional Science and Engineering Fair – Summer Reading Assignment for AP Psychology or the Research Class

If you are receiving this letter – you have signed up for either the AP Psychology and Forensic Science STEM signature lab or you will be taking the research class. To get a head start on CSRSEF work, you will be doing a few things over the summer so that you are not over-whelmed when you start the school year!

1. The first thing you need to do is go to the CSRSEF website: <https://centralsoundfair.org/> and spend some time navigating through the different tabs. Scroll down after the covid-19 message and scroll towards the bottom of the main page, and you will see Frequently Asked Questions (FAQ) under the award winners from 2019. You can look at all questions, but I especially recommend you review “Who Helps Me with My Project” and “What is SRC/IRB and Why does my project need to be approved” FAQ’s. You can also find some really important information when you scroll down to the question Do you have any tips or advice? I highly recommend you read through all these tips and advice. ☺
2. CSRSEF also follows the Regeneron International Science and Engineering Fair (ISEF) category guidelines. You can find the 21 different categories here: <https://www.societyforscience.org/isef/categories-and-subcategories/> and you can compete in ANY ONE of these categories. You can also find the 2019 past award winners here: <https://www.societyforscience.org/isef/awards/> And there is a database for abstracts from 2014-2019 ISEF attendees that can be found here: <https://abstracts.societyforscience.org/>
3. Now go back to the middle of the main page at centralsoundfair.org and click on the Student tab and then click on Forms. The website has not been updated for the 2021 fair yet, but there is still some incredibly important information for you here. Notice there are 4 forms that all students must fill out. **The most important one is FORM 1A. STUDENT CHECKLIST/RESEARCH PLAN.** Please click on this plan and scroll to the 2nd page where it outlines the information required for the research plan.
4. The research plan is an incredibly detailed outline proposal for your CSRSEF research. It typically is about 3-5 pages long and includes great detail regarding all of the information listed at the end of this packet. **You DO NOT need to have the research plan completely filled out when you arrive on the first day of school!** If you do - great! But it is not required. **You WILL need to show me...** (see #4)
5. A. A logbook. This needs to be a composition book or lab notebook where you literally write EVERYTHING that you do with your project, from contacting potential mentors to chicken-scratch note-taking and diagramming procedural ideas. EVERYTHING GOES IN YOUR LOG BOOK.
 - B. Your rationale. See more information below. This should be a lengthy paragraph.
 - C. A rough draft of your detailed procedure
 - D. Five major references in APA bibliographic notation.
 - E. *Also, if you are working with humans, vertebrates, potentially hazardous biological agents and/or hazardous chemicals*, additional questions on the research plan need to be addressed and answered. You should begin the process of answering those questions and keep in mind that pre-approval and additional forms will be required for competing in CSRSEF. To be certain of which forms you will need, you can use the ISEF wizard survey which can be found here: <https://ruleswizard.societyforscience.org/>
- F. Finally, as you start to formulate your research plan, you also need to work at securing a mentor. Your adult sponsor or mentor should at the very least be available for minimal email and/or phone contact to help with questions. Finding a mentor can be a challenge for some students – and so starting early and sending A LOT of emails might be necessary before you even hear back from one scientist or engineer. Jack Andraka, who won the grand prize at ISEF a few years ago, sent 100 emails to potential mentors and heard back from ONE.

His mentor happened to be a professor at Johns Hopkins *who was intrigued by the detail and level of research he had put into his research plan* and decided to clear some lab bench space so that he could test his idea for screening for pancreatic cancer. We have great resources in the greater Seattle area: University of Washington, the Washington State Patrol Crime Lab, Seattle University, Redmond and Seattle Police departments, Seattle Pacific University, ReSTART (which specializes in rehab for technology addiction), Psychologists in private practice and a ton of both private and public Biotech and Engineering firms. Go to their website directory and email your research plan to as many people as possible. *I would email at least twenty professionals over the summer.*

Template Email for Finding a Mentor:

****Please note that this is a TEMPLATE! Make the email your own and provide as much personal detail as possible. If I have 90 students emailing 100's of scientists, engineers and working professionals in the greater Seattle area asking for them to serve as a mentor, they will take note of emails that seem generic and repetitive. ****

Dear _____,

My name is _____ and I am a student at the Tesla STEM High School in Redmond, WA. I am currently taking a STEM signature lab in Forensic Science and AP Psychology. At Tesla STEM in my freshman and sophomore years of study, I have already taken _____ courses and have developed a passion and interest in _____. [You could also include any volunteer or academic accomplishments here that speak to your level of maturity and intelligence.]

As part of the integrated coursework in AP Psychology and Forensic Science, we are performing unique research and competing in the Central Sound Regional Science and Engineering Fair at Bellevue College in March. I am interested in researching _____. I am contacting you today to see if you would be interested in serving as a mentor for my project. This would entail a minimum of 3-5 hours of your time where you would need to look over my experimental procedure and sign a few forms. This could develop into more of a working relationship (if you have the time and are truly interested in my research) where we meet a few times over the course of the next school year to discuss results and/or refine the procedure.

Regardless, I am happy to meet with you in person or discuss this further over email.

Thank you for your time.

Sincerely, _____

Research Plan Overview:

- What is the RATIONALE for your project? Include a brief synopsis of the background that supports your research problem and explain why this research is important scientifically and if applicable, explain any societal impact of your research. (this should be a lengthy paragraph)
- State your HYPOTHESIS(ES), RESEARCH QUESTION(S), ENGINEERING GOAL(S), EXPECTED OUTCOMES. How is this based on the rationale described above?
- Describe the following in detail: • Procedures: Detail all procedures and experimental design including methods for data collection. Describe only your project. Do not include work done by mentor or others.
- Risk and Safety: Identify any potential risks and safety precautions needed.
- Data Analysis: Describe the procedures you will use to analyze the data/results that answer research questions or hypotheses.
- Discussion of Results and Conclusions: Discuss the data/results and the conclusions that you will be able to draw after completing your research.

- Bibliography: List at least five (5) major references (e.g. science journal articles, books, internet sites) from your literature review. If you plan to use vertebrate animals, one of these references must be an animal care reference.

And finally, if you need additional help brainstorming Ideas for CSRSEF:

- Read the New York Times! See what is happening currently in scientific and engineering fields and think about a problem in our society that currently needs a new, innovative solution to make the world a better place!
- Choose something that you are **PASSIONATE** about – and research scholarly articles and .gov and .edu resources to find out as much as possible about your topic.

IMPORTANT NOTE REGARDING COVID-19:

- I highly recommend choosing a project that is computational or engineering based that could potentially work on at home. Given the current quarantine and likely spike in Covid cases once we start moving to phase 2 and 3, it is likely you will NOT be able to attend a mentor's lab or use the electroencephalogram (EEG) or lab equipment at school. Unfortunately, this probably means wet lab and biomedical research will likely not be viable projects for 2020-21.
- If your project will entail working with humans, I would NOT choose a project that requires you to work with your human participants IN PERSON. You could survey humans online to collect data, but because of covid-19, it is likely you will not be able to have direct contact with human participants.

Good luck, have a great summer and I look forward to HOPEFULLY meeting you in-person in September!

Ms. Allender