SCVSEFA HANDBOOK
2016 Rules & Guidelines

The Santa Clara Valley Science and Engineering Fair Association (SCVSEFA)

and

The Synopsys Silicon Valley Science and Technology Outreach Foundation (SOF)

present the

Synopsys Silicon Valley Science and Technology Championship

Wednesday and Thursday
March 16 & 17, 2016
San Jose McEnery Convention Center, **SOUTH HALL**
San Jose, California

Submit applications to:
SCVSEFA
P.O. Box 307
Los Altos
CA 94023

Affiliated with the
Intel® International Science and Engineering Fair (ISEF)

Processing Fee: **A non-refundable handling fee ($15 per student or $30 per team, payable to SCVSEFA) must be submitted with the application. We reserve the right to limit the number of middle school entries based on teacher experience (see web site).**

Mail forms to: SCVSEFA, P.O. Box 307, Los Altos, CA 94023.

IMPORTANT DATES

See website - *http://science-fair.org/students-parents/important-dates/* for times and location details for events.

TEACHER WORKSHOPS and STUDENT CLINICS

Check our website *https://science-fair.org/teacher-information-for-the-fair/teacher-workshop-and-student-clinic-schedule/* for Workshop & Clinic dates, times, and room locations. These are scheduled at the beginning of the school year.

Comprehensive TEACHER WORKSHP at the Santa Clara County Office of Education, **Saturday Sept 26,** 9AM-12PM. Register with email to src@science-fair.org by 9/18. **Breakfast provided**

POSTMARK DEADLINES

Applications requiring SRC preapproval:

Grades 9 -12 projects

Nov 27, 2015 (Friday)

Grades 6 -8 projects

January 8, 2016 (Friday)

Applications NOT requiring SRC preapproval:

January 22, 2016 (Friday) FINAL

SYNOPSYS CHAMPIONSHIP

CHECK-IN DAY

March 16, 2016 (Wednesday)

- **PROJECT CHECK-IN:** NOON—6:00 PM

PROJECTS MUST BE CHECKED IN ON MARCH 16

JUDGING DAY

March 17, 2016 (Thursday)

- Judging: 2:00 PM—5:00 PM
- **Public viewing of projects: 5:00—6:00 PM**
- Project removal: 6:00 PM—6:30 PM

PROJECTS MAY NOT BE REMOVED PRIOR TO 6:00 PM

AWARDS CEREMONY

early April 2016

Table of Contents

Where Can You Turn…

Start by visiting http://www.science-fair.org. Everything in this Handbook and MUCH MORE can be found on our web site . . . Select the Mentors Tab online to review our Mentors Program

STUDENTS

…for help getting started?	*Attend a student clinic (see www.science-fair.org for dates/locations)*
…if you can't find a teacher to sponsor your project	*E-mail: fairmanager@science-fair.org*
…for help with SRC requirements or forms?	*E-mail: src@science-fair.org*
For Intel ISEF Rules and Guidelines see:	*www.societyforscience.org/isef/rulesandguidelines*

TEACHERS

… for general Championship related questions	*E-mail: fairmanager@science-air.org*
…for help with SRC requirements	*E-mail: src@science-fair.org or forms?*
…for additional funding?	*Check out: www.outreach-foundation.org*
…for help with student fees?	*Email: fairmanager@science-fair.org*
…for mailing instructions?	*See bottom of page 1 of this Handbook*

Why Should You Participate?

Our hope for your participation is that you become captivated by the fun and challenge of doing a science or engineering project. A good project will certainly present a challenge and the benefits of overcoming those difficulties will last you for a lifetime. Students tell us that the scariest part of science fair is judging; they also tell us that talking to the judges was the very best part of the process. We hope you will make new friends who share your interests and that you gain insights into possible careers.

Entry Requisites

Students are eligible if they attend grades 6 through 12 of any public-, private-, or home-school in Santa Clara County, and are less than age 20 on May 1, 2016.

Society for Science and the Public (SSP) Rules preclude participation in more than one Intel ISEF affiliated fair. Therefore successful application to the Synopsys Championship means that the student will not participate in other Intel ISEF affiliated fairs.

A student may enter only one project, either as an individual or a member of a team. Team projects may have two or three members (two recommended). All team members must qualify independently for Synopsys Championship eligibility. Individual and team projects will be judged using the same criteria.

The project may include no more than 12 months of continuous research and may not include research performed before January 2015.

Projects that are demonstrations, 'library' research or informational projects, 'explanation' models or kit building are not accepted for the Synopsys Championship.

A non-refundable handling fee ($15 per student or $30 per team payable to SCVSEFA) must be submitted with the application.

Project Classification

Students select the scientific project Category and the best Field of Study for their project. An accurate choice of the Field of Study increases the likelihood that the project will be assigned to judges who understand and appreciate the project. A science project involves using the scientific method to validate a **hypothesis.** An engineering project has an engineering **goal** and involves design and construction of a novel object or process. For more information on Categories and Fields of Study go to https://science-fair.org/rules-and-registration/project-categories/

Project Categories

Four Project Categories are used to classify the projects. Projects are divided based on (1) the amount of professional mentoring and access to non-school laboratories the student received, and (2) the subject matter of the project (Biological vs Physical science).

RRI Projects (*grades 9–12 only*) are

biological or physical science or engineering research projects conducted under the guidance of professional research staff from a (1) Regulated Research Institution (regulated by federal or state laws), or (2) a professional research facility, or (3) with the advice and guidance of a paid mentor.

Non-RRI Projects (all *grades 6–12*) include

all projects from grades 6 through 8 and projects from grades 9 through 12 NOT mentored by a professional research scientist/engineer or paid mentor.

Fields of Study

Students must choose a field of study from the list below which best matches the content of their project. Details for these fields of study may be found on the website at ***https://science-fair.org/rules-and-registration/project-categories/***

BIOLOGICAL SCIENCES AND ENGINEERING

*Behavioral Science
*Plant Science
*Animal Science
*Biochemistry/Microbiology
*Earth and Environmental Science
*Computational Biology and Bioinformatics (HS only)
*Biomedical and Health Science
*Biomedical Engineering

PHYSICAL SCIENCES AND ENGINEERING

*Chemistry
*Chemical and Environmental Engineering
*Physics and Astronomy
*Electrical Engineering
*Mechanical Engineering
*Mathematics
*Software Engineering

Prizes and Awards

• All participating students receive a Championship pin and Certificate of Participation on Check-In Day of the fair.
• Category Awards for 1st place, 2nd place, or Honorable Mention (Ribbons) are awarded by SCVSEFA for scientific merit.
• Outstanding projects in the Senior Division (grades 9-12) win Grand Prize Awards and an all-expense-paid trip to the Intel International Science and Engineering Fair, May 8-13, 2016, in Phoenix, AZ.
• Outstanding projects in the Junior Division (grades 6-8) receive the Isabelle Stone Award (biological sciences) or the Castro Family Award (physical sciences) and are eligible for an all-expense- paid trip to the California State Science Fair in Los Angeles, CA. Date to be determined. See CSSF website www.usc.edu/CSSF/ for more information. An additional 80+ top projects (grades 6-12) win eligibility to attend CSSF.
• Selected winners in the Junior Division are eligible to further compete in the Broadcom MASTERS Competition. Oct 2016 in Washington, DC.
• Two projects in the Senior Division will be selected to be eligible to participate in the I-SWEEEP Olympiad. April 26 through May 1, 2016 in Houston, TX.
• In addition, 60+ companies and organizations present Special Awards based on their own criteria.

General Rules

1. The Synopsys Championship is an Intel ISEF affiliated fair. We follow the Intel ISEF Rules and Guidelines and expect all students to read and abide by the following ethics statement: *"Scientific fraud and misconduct are not condoned at any level of research or competition. Such practices include plagiarism, forgery, use or presentation of other researcher's work as one's own, and fabrication of data. Fraudulent projects will fail to qualify for competition in affiliated fairs or the ISEF."*

2. The fair Application can be downloaded from our website, www.science-fair.org. We require the application be submitted by the student's teacher in its entirety as a single stapled document in page number order, with all required extra forms stapled behind the completed 8-page Application, and the Detailed Research Plan.

3. Projects requiring SRC (Scientific Review Committee) preapproval before beginning experimentation must be submitted by the appropriate deadlines. Our only deviation from the Intel ISEF Rules is that, for safety reasons, we request that projects involving hazardous chemicals, activities, devices or regulated substances also seek preapproval. See pages 6-7 of this handbook for guidance.

4. Additional forms are required for all projects requiring SRC preapproval. The checklist on Page 6 provides details. These forms may be downloaded from our web site www.science-fair.org.

5. Both our web site and the Intel ISEF web site: http://www.societyforscience.org/isef/ have significant amounts of additional and very useful information.

6. A copy of the project Minimum Quality Standards can be obtained from page 6A & 6B of the Application or Handbook page of our website. ***Please adhere to these standards or the project will fail to qualify for competition***.

7. All additional forms should be submitted by the teacher along with the Application in a single document (in Application page order). The Adult Sponsor Checklist (Form1 on page 4 of the Application) should be used to ensure that the Application is complete.

8. Projects that are a continuation of a previous year's research require SRC preapproval. These Projects must involve significant *new* work and additional paperwork is required (see Form 1A of the Application form). Only the current year's research may be on the project board. Submit Form 7.

9. Projects must comply with all local, state and federal laws in addition to SCVSEFA and Intel ISEF Rules. We reserve the right to fail to qualify the project of any student who does not follow these rules.

10. For the 2016 Synopsys Championship the research work has to be done between Jan 1, 2015 and March 15, 2016 (with no more than 12 months total time).

11. All MIDDLE SCHOOL projects must be done in the school, home, or field. No projects will be admitted for work done in a research institution.

12. HIGH SCHOOL projects may be done in a Regulated Research Institution (RRI) such as a university, college, or professional research institution, provided all rules regarding their use are followed. High school students should list their sponsoring high school teacher as the Teacher/Adult Sponsor page 1 of the Application. The RRI project supervisor should be listed as the mentor or qualified scientist.

13. Parent sponsored projects (PSP) at high schools which have a participating teacher are not permitted.

About Safety

Some science experiments and engineering projects are inherently dangerous. The SRC (Scientific Review Committee) review process is designed to protect the students, their peers and families, and the environment.

If any boxes listed under 4) or 6) are checked on the Adult Sponsor Checklist (Form 1), the project will need a **Designated Supervisor (DS).** This person must have training in the field and understand the complexities of the research plan so that he or she is able to complete the risk assessment on Form 3. The DS commits to provide direct supervision.

A **Qualified Scientist** (QS) is a PhD level scientist (or MS with 5 years of training in the field) with expertise in the area of study. The QS is required for all BSL-2 studies or studies using DEA-controlled chemicals and for other projects as specified by Intel ISEF Rules.

Do I Need SRC Preapproval Before I Can Begin My Project?

Some projects may be covered by the rules for more than one category

Is your project a continuation of last years project? **(Continuation Project)**

Yes →

No ↓

Does your project involve...asking your friends or other people questions? experiments on yourself? experiments with people in any way? **(Human Subjects)**

Yes →

No ↓

Does your project involve...your pet? any other animals that have bones(except people)? E-mail src@science-fair.org immediately for assistance with experimental design. **(Vertebrate Animals)**

Yes →

No ↓

Yes →

No ↓

Does your project involve...

- dangerous activities, such as being on a roof? or igniting objects? **(Hazardous Activities)**
- any chemical such as household cleaning agents, solvents, metals or organic chemicals? **(Chemicals)**
- model rockets? lasers? UV light? radiation? guns or gunpowder? or anything else that might be considered dangerous or hazardous? **(Hazardous Devices)**
- prescription drugs? alcohol, wine, or beer? cigarettes or other tobacco? gunpowder? any product which the student may not legally purchase? **(Regulated substances)**.

Yes →

No ↓

You do NOT need SRC preapproval. Your teacher must submit your application by **January 22, 2016.**

You must have SRC preapproval.
See www.science-fair.org/src for more information. Your teacher must submit your application by
Nov 27, 2015 (Grades 9-12)
Jan. 8, 2016 (Grades 6 - 8)
Additional forms are required
See Handbook Page 6

Checklist for Required Championship Forms

Project Content	*Projects not Requiring SRC Preapproval*	*Human Participants (including surveys)*	*Vertebrate Animal Projects*	*Potentially Hazardous Biological Agents, (pathogens, rDNA or Human/Animal Tissues)*	*Hazardous Chemicals, Dangerous Activities, Devices or DEA Regulated Substances*
Application Form	*Yes*	*Yes - and a copy of ANY surveys, photographs*	*Yes*	*Yes*	*Yes*
Registered Research Institutional / Industrial Setting Form (1C)	*See note 1*	*See note 1*	*See note 1*	*See note 1*	*See note 1*
Qualified Scientist Form (2)		*See note 2*	*Yes See note 3*	*Yes See notes 4, 5*	Yes – if using DEA controlled substances
Risk Assessment Form (3)			*Yes See note 9*		*Yes See note 6*
Human Participants Form (4)		*Yes See note 8*		*Yes - for Human Tissue, see note 8*	
Vertebrate Animals Form (5A or 5B)			*Yes See note 3*		
Potentially Hazardous Biological Agents Form (6A)				*Yes* See: http://www.societyforscience.org/page.aspx?pid=319	
Human and Vertebrate Animal Tissue Form (6B)				*Yes - for Human and Animal Tissue only*	
Continuation Project Form 7	*See note 7*	*See note 7*	*See note 7*	*See note 7*	*See note 7*

Forms and expanded information and all Intel ISEF Rules and Regulations for each of these project types may be found at *https://student.societyforscience.org/forms*

1) If work was conducted or equipment used at an institutional or industrial setting at any time, a Registered Research Institutional/Industrial Setting Form (1C) must be completed following the end of experimentation, shown at check-in, and dis- played with the project. **Form 1C is also required for all RRI projects (grades 9-12) which are mentored by a professional research scientist/engineer or paid mentor.**
2) An Institutional Review Board (IRB) must review all human subjects projects for risk assessment and approval BEFORE experimentation begins. If the IRB determines the project involves more than a minimal risk to the human subjects, then a Qualified Scientist will need to oversee the project and complete the Qualified Scientist Form (2).
3) Not required for observational studies involving animals in their natural environment or animals in zoological parks with no manipulation of their environment or interaction between the experimenter and the subject animal(s).
4) rDNA studies must be supervised by a Qualified Scientist or Designated Supervisor with relevant expertise.
5) Qualified Scientist Form (2) is required for studies handling BSL-2 organisms, human and animal tissues or rDNA. Special rules apply for unknown microorganisms isolated from the environment. See ISEF Rules & Guidelines.
6) These projects require a qualified Designated Supervisor and completed Form (3).
7) Continuation projects require Continuation Form (7) which must be displayed with the project.
8) Also requires a sample of the Informed Consent Form.
9) If project is a Vertebrate Animal Decomposition Study.

Completing the Championship Application Forms

The following procedures will help ensure that all applications are complete when submitted and can be reviewed by the SRC (Scientific Review committee) in a timely manner.

Teacher Involvement

- Championship applications can only be submitted by teachers. Deadlines are listed on page 11 of this Handbook. Please add the submission check made out to SCVSEFA with the student's name in the note line.
- If no teacher is available to submit the forms, please email: fairmanager@science-fair.org.

2016 Application Forms

- The 8-page Application Form and Detailed Research Plan MUST be completed online at www.science-fair.org/rules-and-registration/online-application/ and submitted by the teacher as one document stapled together in page number order. All additional forms must be attached after the 8-page application.
- All fields must be completed unless otherwise indicated.
- Each team member must submit a separate, signed Form (1B), and application Consent forms on pp 7-8.
- Additional Forms not included in the Application itself can be downloaded using the Forms link on the website 'Application Instructions' page.

STUDENT CHECKLIST (page 2) Student

All fields should be completed.
Item 4. Your teacher is usually your adult sponsor.
Item 5. If you are continuing work on a project you entered last year, check the box and include a copy of your previous year's Abstract and complete Continuation Form (7). Only this year's work may be displayed on your project board.
Item 6. If your project requires SRC preapproval, write the words "upon approval" in the space for "start date" and leave a blank for "end date." If your project does not require SRC preapproval, you can designate your own start date. (Leave the actual start and end dates blank unless you have completed your project and can get those dates from your notebook.)
Item 7. Indicate where the experiment will be done. Include names, addresses, and phone numbers of *all* locations.

Required RESEARCH PLAN Attachment

The four types of Detailed Research Plans are located at https://science-fair.org/rules-and-registration/forms/. Complete/address all sections of the appropriate plan. Include the details of your experiment or engineering project and insert behind page 3 in your Application Form. Follow the minimum quality standards (use page 6A or 6B of the Application Form for reference). Incomplete forms cause delays in approval.

ADULT CHECKLIST (page 4) Teacher

First read page 5 of this Handbook to determine if SRC preapproval is needed. Then check the appropriate boxes on Form 1 (see Application page 4). If you check any boxes under 4) or 6), additional forms are required. To determine which ones are needed, consult the table on page 6 of the handbook. All forms must be signed and dated by the adult sponsor/teacher *prior* to experimentation.

- **Human Participant Projects**
  Projects involving human subjects ((even if only answering questions), require IRB preapproval. Form 4 is required. Students and teachers should fill out only the top one third of Form 4. Detailed Research Plan forms are located at https://science-fair.org/rules-and-registration/forms/. It is particularly important that a completed Form 4 with accompanying Informed Human Consent Form, Detailed Research Plan, and all required items (surveys, photos, music CD, etc.) be included with the application. After IRB approval, a copy of the signed form will be returned to the teacher for the student to use when recruiting participants.

- **Vertebrate Animal Projects**
  If the project involves animals with bones, students should fill out either Form 5A or 5B. Contact src@science-fair.org and we will put you in contact with our veterinarian who will guide the student through the process.

- **Potentially Hazardous Biological Agents**
  Projects involving bacteria, fungi, viruses, tissues, biological fluids, organs, etc. may never be done at home. Fill out Form 6A, and Form 6B and Form 2 if required. This project area is complicated so refer to the ISEF Rules at *https://student.societyforscience.org/potentially-hazardous-biological-agents.* Some items are exempt: Brewer's yeast, cut hair, pasteurized meat and eggs.

- **Hazardous Chemicals, Activities and Devices**
  This is a broad topic area involving chemicals, tobacco, alcohol, drugs, radiation, fire, rockets, motorized vehicles, etc. We request that you obtain preapproval as the most dangerous projects are often in this category. The designated supervisor must complete Form 3 (Risk Assessment) and answer questions in detail.

STUDENT Responsibilities

- You must obtain PRE-approval for all the types of projects listed above. To do this, all the appropriate additional forms should be filed with the 8-page Application form and Detailed Research Plan. If you need help to fill out the forms, send a note to src@science-fair.org. Correctly completed forms speed the approval process.
- Monitor the web site for the '**status**' of your project (details on page 9).

High School Research done at a Regulated Institute (RRI) or Industrial Research Setting

Rules for RRI use may be found at https://science-fair.org/rules-and-registration/registered-research-institution-use/. Preapproval needs to be given by the Institute's SRC/IRB/IACUC committee when required. All required forms (or Institute's equivalent) must be filled out, signed and dated *prior to start of experimentation*.

Students should have the PI or a Senior Researcher in the Lab fill out Form 1C at the *end* of experimentation.

Minimum Quality Standards

The minimum quality standards for the 4 acceptable project types can be found on page 6A & 6B of the Supplemental Application Form. Remember that these are minimum standards and winning projects are likely to be more complex.

Championship Project Judging Criteria

Category Awards

Category awards are given in each of 4 categories to those projects selected by judging teams for 1st place, 2nd place, and Honorable Mention. About 30% of projects receive a Category Award.

Projects are judged by a team of judges in groups of about 8 to 12 with projects from similar fields of study. Non RRI projects are judged by grade and category. RRI projects (grades 9 to 12 only) are judged by category only. (Category judging in the California State Science Fair (CSSF) and Intel International Science and Engineering Fair (ISEF) is also not done by grade). Projects are judged according to the criteria listed at the right. At least two judges evaluate each project.

Category Award Judging Criteria

	Maximum Points
Scientific Thought or Engineering Goals Did you follow the scientific method or engineering design process?	**10**
Creative Ability Do you have a unique and original problem or solution, or have you used a novel approach?	**10**
Thoroughness Did you find out what others have done on your subject? Did you look at different aspects of the problem? Are your interpretations and decisions supported with data?	**5**
Skill Do you understand the subject? Did you use appropriate laboratory, computational, observational, research and design skills? Did you acknowledge the help you received?	**5**
Clarity Are your abstract and presentation accurate and understandable? Did you present your data using appropriate statistics, graphs, drawings, etc?	**3**
	TOTAL 33

Special Awards

More than 60 companies and organizations select projects to receive Special Awards at the Championship. These awards may include cash, tours, and/or tangible items. Judging for Special Awards is based upon the objectives of the participating company or organization. The Special Awards judges only review projects whose titles fit their criteria of interest. Therefore, **students should choose project titles which tell judges what the project involves from the title information alone**.

Tracking the Status of Your Project

When you have submitted your project to SCVSEFA, it is then *your responsibility* to track its status on the SCVSEFA web site. Use the 'Project Status' link on the STUDENT or TEACHER page to find your project and its assigned Project Number. Projects are listed according to your school and teacher. Project status should be listed on the web site about 7-10 days following the deadline or an earlier mail submission. If you cannot find your project within 2 weeks of submission, please contact us (see page 2). After review for quality and need for SRC pre-approval, your project status will be updated on the website. An e-mail note will have been sent to the teacher and/or student with the project number in the subject line along with a message). You may start the experimental part of your project as soon as your project is marked '**Approved**' on the web site.

Status on www.science-fair.org	Message Meaning
project received	Project has been received and registered online. Be patient while projects are being reviewed, Check back in 7 days for a status update.
project accepted	everything is fine. Begin your research
awaiting SRC review	in queue for review, continue to monitor the web site
project failed to qualify	given for major safety hazards or rules violations that cannot be corrected
project incomplete – see your teacher	If you find this note, contact your teacher to find out what is wrong. Revisions which are needed for project acceptance will be stated in the message along with your specific project ID number.
	If the message is "**quality issues**", check your procedures against the Minimum Quality Standards listed on the application form and on the web site. **Resubmit your improved procedures** as an e-mail reply to the note sent by the Scientific Review Committee
	If the message is "**Forms Violation**", the note will specify the missing/incomplete forms needed. Continue to monitor the status of your project after you **submit the requested forms** until the project status is listed as "Accepted" on the web site.

If your project has been reviewed, and the status is not 'Project Accepted' on our website, you need to be working with your teacher to be sure you make an email response to the SRC in a timely manner with corrections to the application.

Research Plan Instructions (following Intel ISEF rules)

A complete research plan is required and must accompany Checklist for Student (1A)

Detailed Research Plans are located at https://science-fair.org/rules-and-registration/forms/

1. The Research Plan is a succinct detailing of the rationale, research question(s), methodology, and risk assessment of your research project and should be completed before experimentation. For all projects requiring preapproval, this document must be reviewed and approved by the appropriate approval committee (e.g. IRB, IACUC, SRC) before experimentation. ALL changes made to the original plan should be added to the final document as part of the Post Project Summary. For projects not requiring preapproval, this document may be completed either pre- or post-experimentation.
2. All projects should complete a Post Project Summary after experimentation.

The Research Plan and Post Project Summary should include the following::

a. 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.

b. State your **HYPOTHESIS(ES), RESEARCH QUESTION(S), ENGINEERING GOAL(S), EXPECTED OUTCOMES**. How is this based on the rationale described above?

c. 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 can be drawn.

d. 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.

Items 1–4 below are subject-specific guidelines for additional items to be included in your research plan/project summary as applicable.

1. **Human participants research:**

Participants. Describe who will participate in your study (age range, gender, racial/ethnic composition). Identify any vulnerable populations (minors, pregnant women, prisoners, mentally disabled or economically disadvantaged).

Recruitment. Where will you find your participants? How will they be invited to participate?

Methods. What will participants be asked to do? Will you use any surveys, questionnaires or tests? What is the frequency and length of time involved for each subject?

Risk Assessment. What are the risks or potential discomforts (physical, psychological, time involved, social, legal, etc.) to participants? How will you minimize the risks?

Benefits. List any benefits to society or each participant.

Protection of Privacy. Will any identifiable information (e.g., names, telephone numbers, birth dates, email addresses) be collected? Will data be confidential or anonymous? If anonymous, describe how the data will be collected anonymously. If not anonymous, what procedures are in place for safeguarding confidentiality? Where will the data be stored? Who will have access to the data? What will you do with the data at the end of the study?

Informed Consent Process. Describe how you will inform participants about the purpose of the study, what they will be asked to do, that their participation is voluntary and they have the right to stop at any time.

2. Vertebrate animal research:

- Briefly discuss potential **ALTERNATIVES** to vertebrate animal use and present a detailed justification for use of vertebrate animals
- Explain potential impact or contribution this research may have
- Detail all procedures to be used
  - Include methods used to minimize potential discomfort, distress, pain and injury to the animals during the course of experimentation
  - Detailed chemical concentrations and drug dosages
- Detail animal numbers, species, strain, sex, age, source, etc.
  - Include justification of the numbers planned for the research
- Describe housing and oversight of daily care
- Discuss disposition of the animals at the termination of the study

3. Potentially hazardous biological agents research:

- Describe Biosafety Level Assessment process and resultant BSL determination
- Give source of agent, source of specific cell line, etc.
- Detail safety precautions
- Discuss methods of disposal

4. Hazardous chemicals, activities & devices:

- Describe Risk Assessment process and results
- Detail chemical concentrations and drug dosages
- Describe safety precautions and procedures to minimize risk
- **Discuss methods of disposal**

SYNOPSYS CHAMPIONSHIP APPLICATION DEADLINES

Projects	**US MAIL Postmark Deadline** (projects may be hand delivered until 2 days prior to the committee meeting dates)	**SRC Review Meeting** (Safety / Scientific Review)	**Institutional Review Board Meeting** (Human subjects studies) **
Projects from any grade requesting EARLY PRE-APPROVAL	**Oct 9, 2015** (hand delivered by Oct 15)	Oct 17	Oct 17
Projects from any grade requesting EARLY PRE-APPROVAL	**Oct 30, 2015** (hand delivered by Nov 5)	Nov 7	Nov 7
High School Projects requiring PRE-APPROVAL	**Nov 27, 2015** (hand delivered by Dec 3) see address below	Dec 5	Dec 5
Middle School Projects requiring PRE-APPROVAL	**Jan 8, 2016** (hand delivered by Jan 14) see address below	Jan 16	Jan 16
All Projects NOT requiring PRE-APPROVAL	**Jan 22, 2016** (hand delivered by Jan 28) see address below	Jan 30 Projects reviewed for quality	**NONE**

** The IRB committee (which reviews projects involving human subjects) only meets on the 4 dates indicated above. All projects requiring preapproval submitted after Jan 16, 2016 will NOT be accepted.

Applications needing preapproval can be submitted at any time prior to the final deadlines for the project type, but will only be reviewed on the dates indicated above (dates the Scientific Review Committee is scheduled to meet).

Applications may be hand delivered to 2321 Harvard St in Palo Alto, 94306. Please put the application in the drop-off box on the front porch. No need to knock at the door, as box is frequently checked.

CHANGES FROM LAST YEAR'S RULES

1. Synopsys Championship is on Wednesday / Thursday this year (March 16 / 17, 2016).

2. Four project Categories this year with 15 Fields of Study now available.

3. Projects will be judged with projects of the same or similar fields of study in groups of about 10. See page 3 of this handbook for details.

4. There is a new, expanded definition of RRI to cover all projects at the high school level (grades 9-12) mentored by a professional research scientist/engineer or paid mentor. See page 3.

5. 'Product testing' type projects may be done only by middle school students (grades 6-8 only).

6. Additional SRC review dates available - submission for the earlier dates encouraged. See chart above.

7. Several different SRC reviewers will be sending out email notes to teachers/students whose applications need further attention. Please respond by email to the specific *Sender* of the SRC email which you receive.