

# SSEF & Junior Scientist Coordinators Meeting

29 Aug 2018 (Wed)  
Science Centre Singapore

Jointly organised by:



# Overview

- Introduction to SSEF / Intel ISEF
- Registration for SSEF 2019
  - Changes in registration processes
  - Completion of Forms & Common Issues
  - Updates from Intel ISEF 2018
  - Matters Relating to H3 Science Research
- Sharing by Ms Paula Say, Intel ISEF Finalist 2017

# INTRODUCTION

# Singapore Science and Engineering Fair (SSEF) 2019

- Organised by MOE, A\*STAR and Science Centre Singapore
- Open to all students studying in MOE schools, who are between 15 – 20 years old as of **1 May 2019**
- Key dates:
  - 6 Mar 2019 (Wed) – Judging Day
  - 7 Mar 2019 (Thu) – Public Day

# Project Categories

Animal Sciences	Earth and Environmental Sciences	Mathematics
Biochemistry	Embedded Systems	Microbiology
Biomedical and Health Sciences	Energy: Chemical	Physics and Astronomy
Biomedical Engineering	Energy: Physical	Plant Sciences
Cellular and Molecular Biology	Engineering Mechanics	Robotics and Intelligent Machines
Chemistry	Environmental Engineering	System Software
Computational Biology and Bioinformatics	Materials Science	Translational Medical Sciences

For more info on the categories and subcategories, refer to:

<https://student.societyforscience.org/intel-isef-categories-and-subcategories>

**NOTE: Behavioural and Social Sciences is NOT offered at SSEF.**

# Intel International Science and Engineering Fair (Intel ISEF) 2019

- SSEF is affiliated to Intel ISEF
- Top SSEF projects will be selected to represent Singapore at **Intel ISEF 2019**
  - **Phoenix, Arizona, USA**
  - **12 – 17 May 2019**
- Singapore Citizens or PRs
- Official Website:  
<https://student.societyforscience.org/intel-isef>

# Junior Scientists

- Open only to Sec 1 and 2 students (in 2018)
- **At least 1** member must be below age 15 (as on 1 May 2019)
- Period of research – 1 Jan to 31 Dec 2018
- Projects in Sciences / Math / Computing / Engineering
  
- **Individual / team submissions allowed**
- **Maximum of 3 members for team project**
- **Each student can only submit one project**

# Junior Scientists

- 1 student\* represents Singapore at the Broadcom MASTERS International 2019
- Held in conjunction with Intel ISEF 2019

*\*In the case of team project, school to decide which student to attend Broadcom MASTERS*



# REGISTRATION FOR SSEF 2019

# SSEF/Intel ISEF Rules and Regulations

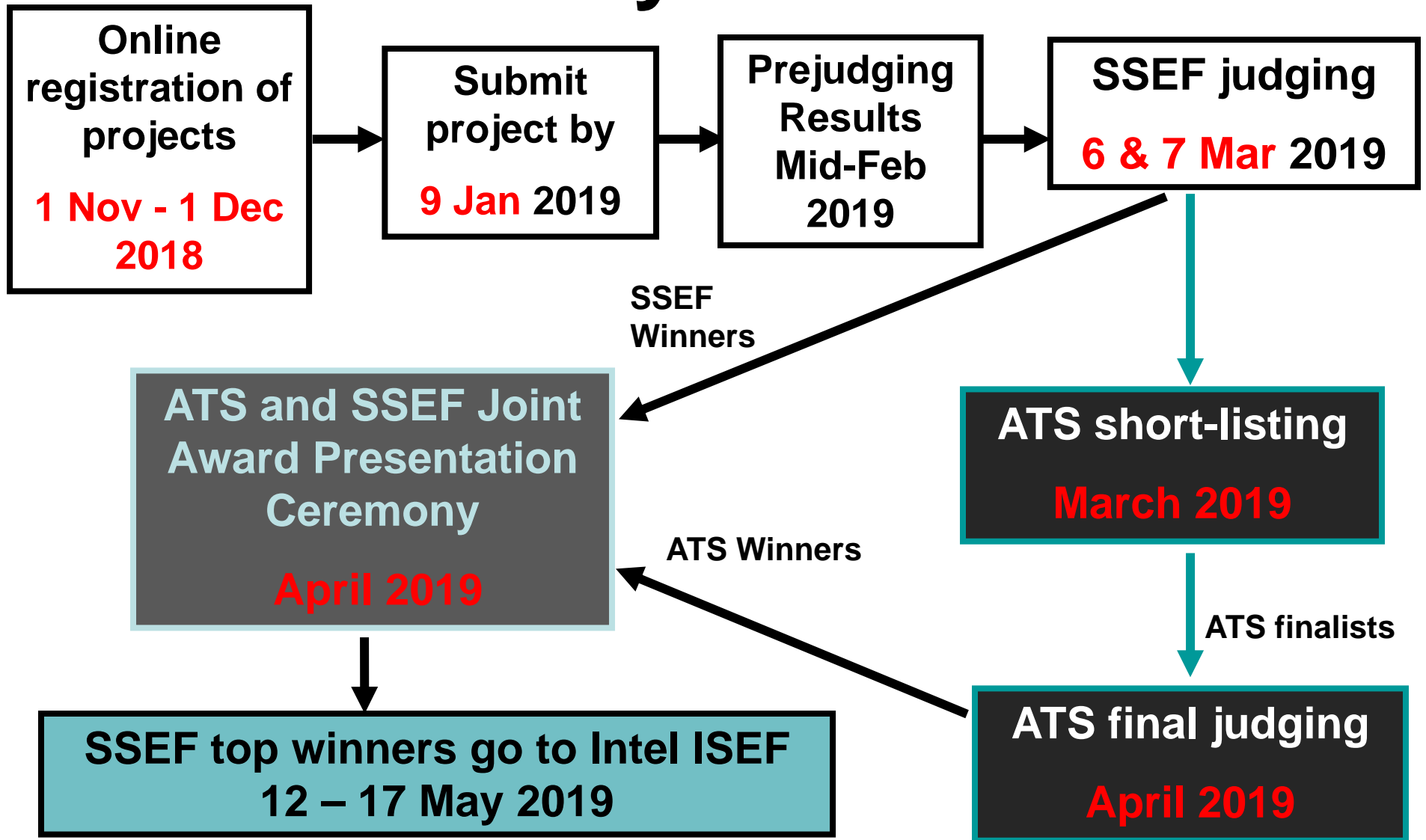
- Research done between **1 Jan 18 – 31 Dec 18**
- Continuation projects will only be judged on work done from 1 Jan 18 – 31 Dec 18 (Form 7 required)
- Individual or team projects
- 1 project per student
- Maximum of 3 members for team project

# SSEF/Intel ISEF Rules and Regulations

[https://student.societyforscience.org/  
international-rules-pre-college-science-research](https://student.societyforscience.org/international-rules-pre-college-science-research)

- Scientific fraud and misconduct are not condoned at any level of research or competition.
- Plagiarism, forgery, using other researchers' work as one's own and fabrication of data will result in immediate disqualification.
- **Projects that do not comply with safety & ethical guidelines will be disqualified.**

# Activity Schedule



# Step 1: Online Registration of Projects (both SSEF and Junior Scientists)

- To register, your students must log-on to **Forms.sg**:
  - SSEF: <https://tinyurl.com/SSEF2019Reg>
  - Junior Scientists: <https://tinyurl.com/JunSci2019Reg>
- The completed form must be submitted between **1 Nov – 1 Dec 2018** (both dates inclusive). Late submissions will **NOT** be accepted.
- A confirmation email will be sent upon successful registration to both team leader and teacher i/c.

SSEF:



Junior Scientists:



# Step 1: Online Registration of Projects (both SSEF and Junior Scientists)

- On 17 Dec 2018, schools would be provided with the allocated **project codes** and the **log-in details** for online submission of project report.

# Step 2: Submission of Project (SSEF Projects)

- SSEF projects need to submit the following items:
  1. SSEF & ISEF Registration Forms
    - School coordinators to submit softcopy by **9 Jan 2019, 5pm**
    - More information to be provided via email.
  2. Cover Page, Abstract, Project Report, Research Plan
    - Students to upload softcopy via online portal (using login details provided)
    - The online portal would be 'live' between 1 Jan and 9 Jan 2019
    - Deadline – **9 Jan 2019, 5 pm**
    - Project Code and Project Title to be indicated on **ALL** submission.
    - Participants' names and affiliations (e.g. school) are **NOT** to be included.

Details of submission requirements and forms can be found at:

<https://www.science.edu.sg/for-schools/competitions/singapore-science-and-engineering-fair>

Late submissions will not be accepted



# Step 2: Submission of Project (Junior Scientists)

- Junior Scientists projects need to submit the following items:
  1. Cover Page, Abstract, Project Report, Research Plan
    - As per SSEF projects
  2. SSEF Registration Forms
    - Only one registration form (i.e. SSEF)
    - School coordinators to submit softcopy by **9 Jan 2019, 5pm**
    - More information to be provided via email.
  3. Video
    - A short video clip (max 2 min, summarizing the research project)
    - To be uploaded to a selected platform by **11 Feb 2019, 12noon**
    - More details would be put up on SSEF website.



# **COMPLETION OF FORMS & COMMON ISSUES**

# SSEF/Intel ISEF Forms

SSEF/Intel ISEF forms serve to:

- ensure safe laboratory practices and adherence to regulations
- protect the rights and welfare of the
  - student researcher(s)
  - human participant(s)
  - vertebrate animal subject(s)
- protect the environment

It is **NOT** an additional administrative burden  
but a necessary part of scientific research.

# SSEF/Intel ISEF Forms

**Every project submission** must include:

- Form 1 (Checklist for Adult Sponsor)
- Form 1A (Student Checklist) + Research Plan/Project Summary
  - In the research plan, state very clearly which steps are carried out by students and which are carried out by qualified adults.
  - If there are deviations to the original research plan, those changes must have been approved and be recorded in the project summary.
- Form 1B (Approval Form) – 1 per **member**
- **Form 3 (Risk Assessment)\*\***
  - **Compulsory except for work that are purely computational**

# SSEF/Intel ISEF Forms

**Additional forms** if applicable

- Form 1C: If work conducted in regulated research institutions (RIs)
  - **BSL2 projects must NOT be conducted in school labs**
- Form 7: If the project is a continuation/progression of a previous project in the same field of study
  - + previous abstract
  - + previous research plan

# SSEF/Intel ISEF Forms

If projects involve

- **Human Participants**
  - **Vertebrate Animals**
  - **Potentially Hazardous Biological Agents**
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- Additional forms required
  - Approval from school or RI's IRB/SRC **before** **experimentation** required (Form 1B and other relevant forms)

# IRB/SRC

- Institutional Review Board
  - Role: To evaluate potential physical and/or psychological risk of research involving humans. Includes reviewing of surveys/questionnaires to be used in project.
  - Composition: min 3 members
    - 1x Educator
    - 1x Principal / Vice principal (or equivalent administrator)
    - **1x Medical or mental health professional**

# IRB/SRC

- Scientific Review Committee
  - Role: To evaluate student research for compliance with rules, laws and regulations
  - Composition: min 3 members
    - **1x Biomedical scientist with a doctoral degree**
    - 1x Educator
    - 1x Additional member

# Setting up school's IRB/SRC

For schools that are interested to set up their own IRB/SRC, please seek Affiliated Fair approval by sending the necessary documents and forms to:

**Science Centre Singapore**

**SSEF Secretariat**

**15 Science Centre Road**

**Singapore 609081**

**No Adult Sponsor, parent or other relative of the student(s), the Qualified Scientist, or the Designated Supervisor who oversees the project may serve on the IRB / SRC reviewing that project.**



# SSEF/Intel ISEF Forms

- **Human Participants**
  - IRB approval required (Form 1B, Form 4)
  - Qualified Scientist Form 2 (if applicable)
  - Human Informed Consent form (if applicable)
  - Sample Survey form (if applicable)

# SSEF/Intel ISEF Forms

- **Vertebrate Animals**
  - SRC approval required (Form 1B)
  - Qualified Scientist Form 2
  - Vertebrate Animal Form 5A (if done at non-regulated RI) / Vertebrate Animal Form 5B (if done at regulated RI)
  - PHBAs Risk Assessment Form 6A (if applicable)
  - Human & Vertebrate Animal Tissue Form 6B (if applicable)
  - IACUC Approval (if applicable)

# SSEF/Intel ISEF Forms

- **Potentially Hazardous Biological Agents**
  - SRC approval required (Form 1B)
  - Qualified Scientist Form 2 (if applicable)
  - PHBAs Risk Assessment Form 6A
  - Human and Vertebrate Animal Tissue Form 6B (if tissue is involved)

# SSEF/Intel ISEF Forms

Type of project	Documents to submit
<b><u>ALL</u></b> projects	Form 1 Form 1A + Research Plan/Project Summary Form 1B – 1 per <b>member</b> <b>Form 3** - Compulsory except for purely computational work)</b>
Work conducted in regulated RIs	+ Form 1C
Continuation of project	+ Form 7 (and previous years' abstracts and research plans)
Involved human participants	+ Form 1B, Form 4 + Form 2 (if applicable) + Human Informed Consent form (if applicable) + Sample Survey form (if applicable)

# SSEF/Intel ISEF Forms

Type of project	Documents to submit
Involve vertebrate animals	+ Form 1B + Form 2 + Form 5A (if done at non-regulated RI) / Form 5B (if done at regulated RI) + Form 6A (if applicable) + Form 6B (if applicable) + IACUC Approval (if applicable)
Involve potentially hazardous biological agents	+ Form 1B + Form 2 (if applicable) + Form 6A + Form 6B (if tissue is involved)

# SSEF/Intel ISEF Forms

- Form wizard: generate a list of forms required for your project

<https://apps2.societyforscience.org/wizard/index.asp>



- Download Intel ISEF forms from <https://student.societyforscience.org/intel-isef-forms>



# SSEF/Intel ISEF Forms

- In addition to Intel ISEF forms, download SSEF entry form from Science Centre website

<https://www.science.edu.sg/for-schools/competitions/singapore-science-and-engineering-fair>



# SSEF/Intel ISEF Forms

- For more details, please refer to:

Intel ISEF International Rules and Guidelines 2019

<https://sspcdn.blob.core.windows.net/files/Documents/SEP/ISEF/2019/Rules/Book.pdf>





# Key points to note:

Please read forms carefully before completing them:

- MM/DD/YY format for ALL dates
  - ambiguous cases could imply non-compliance with SSEF/Intel ISEF rules
- Take note whether forms should be completed **before (most forms)** or **after (Form 1C, Form 5B)** the research has taken place

# UPDATES FROM INTEL ISEF 2018

# Changes

- Human Participants - **Removed expedited review\***, i.e. any project that requires IRB approval requires full approval (i.e. full committee).

*\*expedited review = review by just one member of the IRB*

- Vertebrate Animals – new rule on **maximum permissible weight loss of 15%** for the experimental animals vs control group.

# Changes

- Formatting of forms:
  - Form 1C – now 2 pages to provide more writing spaces.
  - Form 7 – only current and previous year project details on the form. Additional forms may be used for all prior projects.

# Top reasons for disqualification at Intel ISEF 2018

- ❑ Study conducted **prior to January 2017**
- ❑ Genetically engineering organisms with **multiple drug resistance** traits.
- ❑ Toxicity study utilizing **vertebrate animals**
- ❑ Behavioral experiment using conditioning with **aversive stimuli**

If the intent of a student-designed project falls into an area prohibited by ISEF (e.g. **vertebrate animal study** or **BSL-3 study**) and the prohibited segment is performed by others, the project fails to qualify even if the student actually did only the allowable segments.

# H3 SCIENCE RESEARCH

# Guidelines on the use of H3 Science Research Projects for SSEF

- H3 Science Research examination documents are **not** permitted for exhibition, competition or publication without the authorisation by the Chief Executive, SEAB

## Time Frame

- Candidates must submit the H3 science research papers to the examining agencies and clear the Oral Defence of the science projects **before** the start of the SSEF in March.
- Candidates **should not** have any further contact with NUS/NTU/equivalent examination authority upon submission to the examining agencies when preparing for SSEF.

# Guidelines on the use of H3 Science Research Projects for SSEF

## Materials

- Candidates **should not** use the same H3 examination documents submitted to the examining agencies for the SSEF.
- The written report submitted for the SSEF is different from the H3 Science research paper submitted as an examination work.
- The mode used for the SSEF's oral presentation (poster) is different from the H3 Oral Defence (e.g. PowerPoint).
- Candidates **should not** make reference to the work submitted for the SSEF as having been an examination submission (e.g. by removal of examination labels, candidate index, title of H3 programme and examining agency).



# Guidelines on the use of H3 Science Research Projects for SSEF

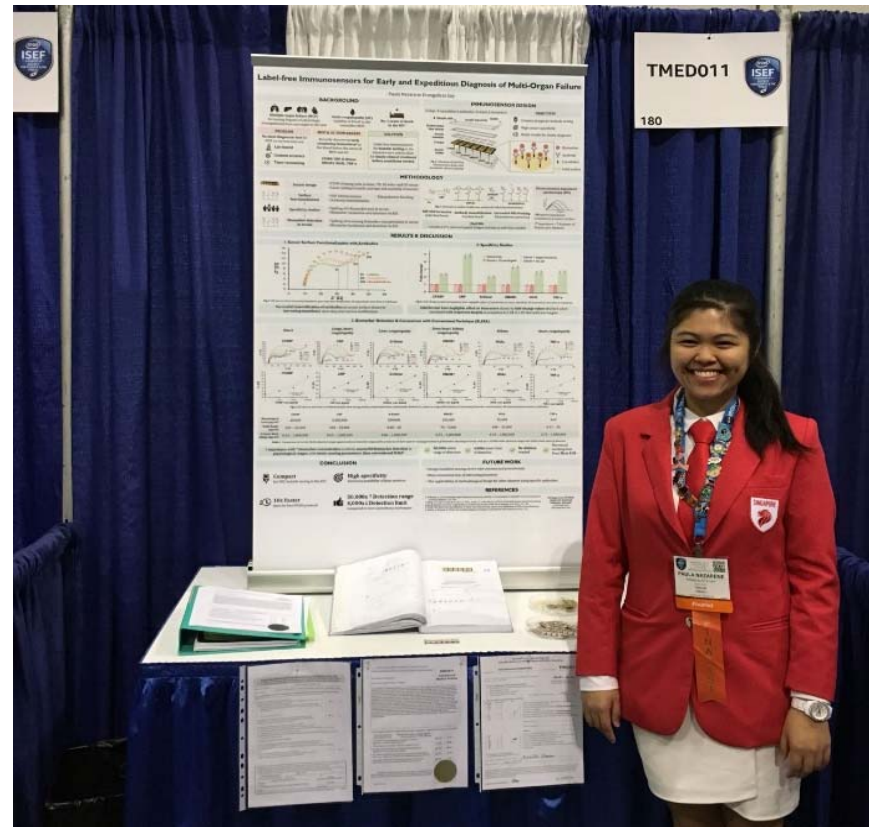
## Results

- Candidates **should not** use the results obtained from the SSEF as a basis to contest the results awarded by SEAB for the H3 science research programmes.

# Guidelines on the use of H3 Science Research Projects for SSEF

## Declaration (Teachers to note)

- Candidates in the H3 Science research programmes are required to submit a **declaration form** to Curriculum Policy Office and acknowledge the conditions and implications for participation in the SSEF.
- Schools will collate and submit the declaration forms by first week of December 2018.



**SHARING BY MS PAULA SAY**

**INTEL ISEF FINALIST 2017**

**4<sup>TH</sup> AWARD IN TRANSLATIONAL MEDICINAL SCIENCE CATEGORY**

# A\*STAR Talent Search (ATS) 2019

- To recognise students who have excelled in scientific research
- Must take part in SSEF 2019
- <http://www.science.edu.sg/ats>

# Contacts

Ms Pamela Loke	6425 2590 Pamela_LOKE@science.edu.sg	For ATS and SSEF matters
Mr Koh Siak Peng	6879 6583 KOH_Siak_Peng@moe.gov.sg	For SSEF Matters
Dr Alice Tan Siew Hwey	6879 6226 TAN_Siew_Hwey@moe.gov.sg	
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# Thank you!

## Q&A time

For updates on SSEF and ATS, please visit

<https://www.science.edu.sg/for-schools/competitions/singapore-science-and-engineering-fair>

