

GREATER SAN DIEGO SCIENCE & ENGINEERING FAIR (GSDSEF)  
PROJECT PROPOSAL/SIGNATURE\* FORM (GSDSEF-1, 2015)

This form must be completed and signed prior to starting project work. It must be placed in the student's notebook with an ABSTRACT OF THE PROJECT for the GSDSEF Screening Fair. (Use the "Tab" key to move from line to line)

1. Project Title FORECASTING THE IMPACT OF CLIMATE CHANGE ON AGRICULTURAL CROP YIELD

Is this a continuation of a previous project?  Yes  No

2. STUDENT'S NAME (Last, First, Middle) Suri, Anirudh

2a. Partner's Name (for Senior Division 2 person projects only) \_\_\_\_\_

EACH SENIOR DIVISION PARTNER MUST SUBMIT A SEPARATE PROJECT PROPOSAL FORM.

3. Address, City, Zip 12052 Daymark Ct

4. Phone (858)-775-7763 email surianirudh1@gmail.com

5. School Thurgood Marshall Middle School Grade 8

6. Teacher Elaine Gillum

7. This project involves (check all that apply):

- Live Vertebrate Animals (GSDSEF-2, 2015)
- Humans as subjects, helpers, or interviewees (GSDSEF-3, 2015)
- Hazardous Substances (anything that could cause injury) (GSDSEF-4, 2015)
  - Chemicals
  - Infectious Agents
  - Bacteria, Fungi and/or Molds
  - Mutagenic Agents
  - Carcinogenic Agents
  - Teratogenic Agents
- Human or Other Vertebrate Tissue (GSDSEF-5, 2015)

8. WHERE REQUIRED (see #7 above), the following supplemental forms must be completed and included with the project proposal form (CHECK ALL THAT APPLY):

- Certification of Humane Treatment of Live Vertebrate Animals (GSDSEF-2, 2015)
- Certification of Compliance of Research Involving Humans (GSDSEF-3, 2015)
- Certification of Hazards Control (GSDSEF-4, 2015)
- Certification of Vertebrate Tissue Source & Safety (GSDSEF-5, 2015)

9. Location where experimental procedures will take place: \_\_\_\_\_

Daily record weather from weather stations in Fresno, Fern, Tulare, Merced and San Joaquin, California

10. People, companies, etc. providing equipment, materials, workspace: N/A

**11. Describe, in 200 – 250 words, the planned project/experiment and the procedures to be used:**

This project will be investigating the impact of climate change in San Diego by measuring the daily high and low temperatures, night time dew point temperature, humidity and rainfall recorded from June 1st 2014 to November 25th 2014. The project will then compare the observations to similar periods from 2004-2013. This study will help correlate the effect of temperature changes on the yield of agricultural crops in the Southern California region.

**Procedure Part I: Preparation for Testing**

1. Set up Excel Document with formulas for GDD's and CHU's and columns for daily high, low, dew point, humidity and rainfall.
2. Identify website where weather station can be monitored online for the duration of testing (<http://www.wunderground.com/cgi-bin/findweather/getForecast?query=Fresno%2C+CA>)
3. Identify source for previous weather data for comparison purposes (<http://berkeleyearth.lbl.gov/locations/36.17N-119.34W>)
4. Get a climate change expert, Maximilian Auffhammer, to help review the data analysis when testing is complete

**Procedure Part II: During Testing**

1. Daily record weather from weather stations in Fresno, Fern, Tulare, Merced and San Joaquin, CA
2. Input data to the set-up excel document.
3. Repeat daily throughout the summer and mid-fall (June 1st-November 25th)

**Procedure Part III: After Testing**

1. Analyze data for temperature trends that impact agricultural crop yields
2. Develop forecasting model based on the data analysis for agricultural yields
3. Review data analysis and forecasting results with mentor

Just before the screening fair, attach a 200-250 word ABSTRACT of your project to this form.

*\*Continue to next page for required Signatures*

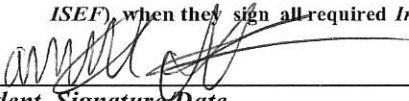
GREATER SAN DIEGO SCIENCE & ENGINEERING FAIR  
(GSDSEF) PROJECT PROPOSAL/SIGNATURE FORM (GSDSEF-1, 2015)

REQUIRED SIGNATURES:

**Student:**

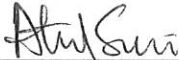
I have read the *Rules and Regulations* of the GREATER SAN DIEGO SCIENCE AND ENGINEERING FAIR and certify that my project complies with them. I understand that failure to meet the terms of these rules and regulations will result in the disqualification of my project.

SENIOR DIVISION: GSDSEF forms meet the requirements of California law; therefore, all Senior Division students agree that, should they be selected to compete at the 2015 *Intel International Science and Engineering Fair (Intel ISEF)*, when they sign all required *Intel ISEF* forms they will predate them to agree with the date on this form.

 6/1/14  
\_\_\_\_\_  
*Student Signature/Date*

**Parent/Guardian:**

I am aware of all potential safety hazards connected with this project, approve the precautions being taken to ensure my student's safety and will, when appropriate, provide guidance and/or supervision. I understand that failure to comply with *Rules and Regulations* of the GREATER SAN DIEGO SCIENCE AND ENGINEERING FAIR will result in the disqualification of the project.

 6/1/14  
\_\_\_\_\_  
*Parent Signature/Date*

**Teacher:**

I approved this project prior to the student beginning work on it and verified that it complies with the *Rules And Regulations* of the GREATER SAN DIEGO SCIENCE AND ENGINEERING FAIR. Any concerns about the project's design, appropriateness, safety, or legality were submitted to the GSDSEF Scientific Review Committee (SRC) for approval prior to allowing the student to proceed. I understand that failure to comply with the Fair's *Rules And Regulations* will result in the disqualification of the project. I will provide all needed supervision (other than that specified on other included forms) and will ensure that this proposal and all required supplemental forms are included in the student's notebook at the screening fair. I will have the student, if invited to apply for entrance to the GSDSEF, submit all SRC requested certification forms with their 2015 *Application for Entrance*.

 6-1-14  
\_\_\_\_\_  
*Teacher Signature/Date*

**Additional Advisor** (if required)

When certification forms ( *GSDSEF 2, 3, 4 or 5, 2015*) are signed by someone in addition to the science teacher, a signature here ensures that the procedures described on these forms will be followed.

\_\_\_\_\_  
*Additional Advisor Signature/Date*