

**GUAM
SCIENCE &
DISCOVERY
SOCIETY**

**ATTENTION: Students, Teachers, and Parents
Information, Rules and Entry Forms for the
43rd Annual Guam Island Wide Science Fair**

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This year's 43rd Guam Annual Island Wide Science Fair will be held virtually, unless vaccines become widely available. All participants must submit entry forms by Friday, March 26, 2021. Completed entry forms and project reports and power point posters are to be turned in Online through our website at: (www.guamislandwidesciencefair.org). Contact Megabyte in Tamuning, this year's website sponsor, if you have technical difficulties and need help with entering your project. Don't leave entering to the last day it may be crowded Online towards the deadline.

Online projects will be judged between March 26 -April 7, 2021. Finalists will be notified and selected projects will be invited to either set up at UOG on Friday April 9, 2021 between 5-7 PM for Final judging Saturday April 10, 2021 between 8:30 and 3:30PM or they will be given a zoom ID code by email for their Online interview depending upon the COVID situation. Interested persons should read the entirety of these information sheets because a lot of changes have been made in order to go virtual. If you have any questions please contact the Fair Director, Claudia Taitano, email: youtheducatoralservices@gmail.com or call (671)482-1776 or 477-3658, for questions general help or for Scientific Review Committee Safety requirements and those interested in requirements for the International Science Fair.

Contact Dr. Austin Shelton for help with Environmental Science and Marine science projects at shelton@uog.edu, or call (671)686-2270. Contact Dr. Frank Camacho, for help with Biology, Chemistry and Physical Science and Electronics projects at (671) 735-2835 dr.frank.camacho@gmail.com or Roland San Nicolas for help with library resources for your reports at (671) 735-2341 rolandsn@gmail.com. Because it is unlikely that vaccines will be available for everyone in time for the fair a project report and poster using power point or for grades K, to 5 a picture of their posters will need to be attached to the entry form. Phone numbers for each student and an email will be required so those selected from their reports can be interviewed virtually by the judges.

WHO CAN ENTER?

All Elementary, Middle/Junior, or Senior High level students from all public, private, home schools and DODEA schools are welcome to submit entries. We realize that schools might not be able to hold traditional school fairs. To accommodate this problem each school can decide how many projects they need to submit. Since we won't need tables this year feel free to submit what your teachers select from each of their classes. Each science class might select their best representative projects. Home schooled students may submit their projects directly.

SHOULD YOU SUBMIT GROUP PROJECTS?

Projects should be the efforts of individual students, while groups are eligible for some category awards, group projects will not be considered for top overall awards. While some schools may find it financially better for students to work in groups, students should come up with their own approach, poster and experiment if they want to be eligible for top prizes. Groups may not be larger than 3 members. Only one trophy may be available for each place in each category, so group entries will have to decide how the trophy will be received if a group project wins. Try to have students develop their own approach or experiment when working with limited supplies or in groups so that although they may be sharing supplies or equipment and have similar subject matter they have their own project presentation, report and entry. This is important for their education as well. In school a student has to take his/her own SAT test for example. They do not get a degree in college as a group, but as an individual.

HOW DO I ENTER?

A filled out copy of the 43rd. Annual Guam Island Wide Science Fair Entry Form must be submitted for each entry along with a report explaining what was done and a virtual poster picture or power point. Copies of Rules and forms are also available by email above and on the Official Science Fair Website at (www.guamislandwidesciencefair.org) When filling in the Entry form please supply all information. Note that Completed forms must be turned into the website no later than 5PM, Friday, March 26, 2021. All research projects involving humans, animals, controlled substances, pesticides, hazardous chemicals, tissues and DNA, must submit the Qualified Scientist Form.

WHAT ABOUT SAFETY?

Living or dead animals or any potentially dangerous items must be properly displayed and or handled. No living or dead animals, insects, or cultures (petri dishes) or hazardous items may be used without approval before you begin your experiment. **You MUST have a signed approval of a medical doctor if your project involves human research or a veterinarian if your project involves animals before conducting your research if your project involves animals or if your project serves as a pesticide, or involves use of hazardous chemicals or extracts from plants you must have the supervision of a trained chemist or biologist with a Phd. Contact Dr. Frank Camacho at the University of Guam science building for help finding an appropriate person to approve your project.**

Projects involving Blood, humans as test subjects, molds, RNA, DNA or stem cell and tissue cultures require an MD approval before beginning your project in order to meet International Science and Engineering Fair requirements and guidelines for student research.

We support these safety guidelines and requirements. If you have any questions, or need copies of the required International Science and Engineering Fair rules guidelines for grades 9-12 and forms contact the Fair Director, Claudia Taitano at youtheducationalservices@gmail.com. At set up time Scientific Review Committee members will check your project. No potentially dangerous projects will be allowed. Qualified Scientist forms are required in advance of experimenting along with a plan for research. Failure to submit forms in the interest of safety may disqualify entrants from various prizes and participation.

WHAT ARE THE SUBJECT CATEGORIES?

All projects will be placed in an appropriate category by the entrant(s) and or Science Fair administrators if there is a problem with the category selected by the entrant. The chief judge will settle any disputes. The categories are: 1) Ecology, Earth Science and Sustainability projects, 2) Physical Science, Electronics, Computer and Math projects, 3) Human/Medical projects, 4) Animal/Plant projects, 5) Chemistry projects 6) Energy, Inventions including Engineering, and Robotic projects.

WHAT ARE THE GRADE GROUPINGS?

In determining the trophy awards this year the 42nd Annual Island Wide Science Fair will utilize the following grade groupings called Divisions: Division I grades K, 1, 2; Division II grades 3,4,5; Division III grades 6,7,8; Division IV grades 9,10,11,12. Grades K, and 1 usually have very few students, any students competing from these grades will be encouraged with a special consideration due to age. Age will be considered by the judges in the grade groupings and for some other prizes. Depending upon the number of entries grade grouping or category groupings may change.

HOW DO I SET UP MY PROJECT?

Projects will be evaluated based on the completed entry forms, report submitted and virtual power point poster. Those projects meeting the requirements will be given a zoom room judging number and an interview time. Their project will be uploaded by Megabyte to our zoom judging platform on our website at (www.guamislandwidesciencefair.org) Selected first round winners will be notified via email for live judging either in person if COVID permits by then or virtually via zoom rooms. You must attach a report and poster when you enter on the website in order to be judged.

WHAT IS INCLUDED IN THE WAIVER OF LIABILITY:

There should be a Principal or teacher or parent responsible for supervising students from their school, while conducting and presenting their projects if home schooled, students should have a parent supervising the projects. Participants by submitting the entry form certify that it is agreed that the fair, GSDS, its organizers, sponsors, judges and the University of Guam will not be held liable for any and all problems or injuries that may occur during set up, at the fair, or at the awards ceremony, or at space camp, internships or ISEF if a winner.

WHAT IS THE RELEASE FOR USE OF PICTURES IN MEDIA AND PUBLICATIONS ABOUT?

By submitting the entry form participants, parents and teachers agree that pictures may be taken during the fair and awards for use in media and publications and agree to release the pictures for use in various media including TV, Internet website and publications.

WHAT ARE THE PRIZES?

All participants will receive a certificate when their school representative attends the awards ceremony. The category winners will receive trophies, compliments of Marianas Energy Co and IPE, Shell Guam and others. Major sponsors include; Marianas Energy Co and IPE, Shell Guam. The University of Guam and Megabyte this year's virtual website host.

Major Contributors provide major support for the fair through faculty, facilities and assistance from programs such as NSF, Sea Grant, EPSCORE and NOAA and internship prizes.

Other contributors include; United Airlines, Pacific Daily News, KUAM, Mc Donald's, Payless Markets, Pepsi, Trident Consulting, Basto Catering and others.

The Overall Grand Prize winner may receive: *** A TRIP on United Airlines to the NASA SPONSORED SPACE CAMP or SPACE ACADEMY for winner in Huntsville Alabama.

The winner must have a valid passport.

Winners as young as 12 years old may qualify for the space camp prize. The flights, tuition and airfare only are covered for Space Camp. There are no accommodations for parents and adults at space camp, because this is a camp. There may be adult camps at a similar time. Students must share accommodations with others in the camp. There may be restrictions about some foreign nationals being allowed to attend Space Camp and Space Academy Camps. If the COVID threat is not over this winner will be given a computer from Megabyte instead or an internship.

Other Overall Division Winners may receive:

The top 3 overall senior winners will be selected to represent Guam at the Virtual International Science and Engineering Fair. Selected winners in the senior high division grades 9-12 may be eligible for a summer internship at the University of Guam as well.

Other Division winners may receive Computer tablets. Trophies and other prizes will be announced at the awards ceremony.

**GSDS is not liable for prizes if the sponsor goes out of business or has some other problem that makes them unable to fulfill their pledged prize.

Other prizes may be made available by various Guam businesses later. Category trophies will be awarded and certificates. All prizes will be awarded at the Guam Hilton Hotel Awards Ceremony, scheduled for Sunday, May 30, 2021 from 6:00 P.M. until 8:00 PM. Masks will be Required. Availability of prizes is dependent upon receipt of pledged donations. If Airlines go out of business or the business does not fulfill its pledged donation, GSDS will not be able to be responsible for the prize.

HOW ABOUT THE AWARDS CEREMONY?

This year's awards ceremony will be at the Guam Hilton, Micronesian Ballroom. Light refreshments will be served, beginning at 6:00 P.M. Sunday, May 30, 2021. Trophies for category winners and prizes will be awarded to each individual winner. Pictures will be taken. This has always been a nice event. All entrants are encouraged to attend and to dress appropriately to having their picture in the newspaper. School uniforms are fine. Reasonable numbers of guests are of course acceptable, such as parents and teachers. Masks are required. Due to social distancing guests will be limited to 2 for each winner. Due to COVID this may change the date or even the venue may change.

WHAT WILL BE DUE ON MARCH 26, 2021 AND VIRTUALLY JUDGED?

1. All projects must include a complete entry form for each participant with phone numbers and email addresses so they can be contacted for judging. In order for us to affiliate with ISEF and for funding we also must prove all ethnicities are included and males and females are included, so fill out all of the information requested so we can continue to hold the science fair. Ages and grades are required for competition grouping. Failure to provide a complete entry form application will disqualify your project.

2. Also required For ALL Grades A virtual Poster, using powerpoint (Grades K,1,2,3,4 and 5 may just take a pictures of a hand written poster as long as we can clearly see all the writing if they can't use powerpoint. The virtual poster should include:

- A. Project Title at the Top
- B. 2 Paragraph Abstract (This is a short summary of the Project)
- C. Statement of the Hypothesis (This is the Question being investigated)
- D. Explanation of the Experiment used to test the hypothesis
 - 1.) Discuss the procedure used (Don't waste space listing materials)
 - 2.) Discuss the control group and experimental group, Discuss the variables
 - 3.) Include pictures of your experiment and data or table of your data
 - 4.) Include a graph or analysis of the resulting data
- E. Discuss your results conclusion and recommendations.
- F. Briefly list any help you received

3. A Project Report is Required for All projects. It along with the virtual poster will be judged in round one. The report should be no more than 12 pages and may be many fewer pages for lower grades. A good formula for teachers might be a page for every grade up to say 10 pages. Grade 1's report might be 1 page long for Grade 2 a report of 2 pages would be fine. ...Use as many pages as it takes to explain what was done, see page 5 for more detailed information.

4. A Video explaining the project 2 minutes in length may be attached. (see the science fair website for more details and tips for creating a video) The Video is optional.

WHAT SHOULD BE INCLUDED IN YOUR PROJECT REPORT?

The Project Report should include the following: (No more than 12 pages double spaced, 12pt Times font, captions under pictures or data may be smaller) This gives the student the chance to explain the project in more detail than the poster board alone. Grades Kinder through 2 do not have to type their reports. It will be important along with the virtual poster in round 1 judging.

1. The following should be included on the first page of your report:

- Your First and Last Name
- Project Title
- School
- Grade

2. What is your research question?

- Explain what is known or has already been done in your research area. Include a brief review of relevant literature. If this is a continuation project, a brief summary of your prior research is appropriate here. Be sure to distinguish your previous work from this year's project.
- What were you trying to find out? Include a description of your purpose, your research question, and/or your hypothesis.

3. Explain your methodology and procedures for carrying out your project in detail.

- What did you do? What data did you collect and how did you collect that data? Discuss your control group and the variables you tested.
- DO NOT include a list of materials.

4. What were the result(s) of your project?

- Include tables and figures which illustrate your data.
- Include relevant statistical analysis of the data.

5. What is your interpretation of these results?

- What do these results mean? Compare your results with theories, published data, commonly held beliefs, and expected results.
- Discuss possible errors. Did any questions or problems arise that you were not expecting? How did the data vary between repeated observations of similar events? How were results affected by uncontrolled events?

6. What conclusions did you reach?

- What do these results mean in the context of the literature review and other work being done in your research area? How do the results address your research question? Do your results support your hypothesis?
- What application(s) do you see for your work?

7. References

- This section should not exceed one page. Limit your list to the most important references. List the references/documentation used which were not of your own creation (i.e., books, journal articles). Use the APA citation format.

HOW WILL PROJECTS BE JUDGED?

There will be numerous judges, many of them are university professors with a doctorate in the category they are judging. Some of the judges are medical doctors and nurses and some have had specialized training with the Armed Forces. During the first round of judging from March 26 - April 7, 2021, we will have two judges as a pair review the reports and power point posters in each category . Be prepared to briefly describe your project and or answer questions relating to your project if emailed or called or invited to join a zoom meeting interview. Greater basic credit is given to projects of a problem solving experimental nature and less credit to collections, models, displays, and demonstrations. Your power point poster and report (no longer than 12 pages) should provide enough information for a judge to determine what your project involves.

WHAT IS THE JUDGING CRITERIA? Judging criteria is taken from the criteria used in Hawaii Science and Engineering Fair and the International Science and Engineering Fair it includes:

- 1) Creative Ability- originality in question asked, methods, data analysis, and interpretation of data. (25%)
- 2) Scientific Thought- Experimental Design with variables and controls. Use of appropriate engineering process if it involves an engineering project. Are objectives and procedures clearly stated. Are variables or potential users needs are well defined. In case of inventive or engineering projects, are relevant, and adequate testing of a problem and solution evident. (35%)
- 3) Thoroughness, is the purpose achieved, completeness of data and notes, knowledge of scientific literature and other approaches to problem solution evident. (15%)
- 4) Skill - Is there evidence of student competence in lab, computation and design skills, craftsmanship of products, assistance received and type technical consultant help received. (15%)
- 5) Communication- is the project clearly described or explained, is there effective use of language, is it easy to read. (10%)

WHAT IS THE JUDGING PROCESS?

The first round of judging will be conducted between March 26 entry deadline and April 7, 2021 to determine first, second and third place in each group and category, 72 basic winners will be determined. Their projects will be set up and featured on the website on Friday April 9, 2021 during Set up. If COVID status permits we may allow set up of actual projects. After the first round winners will be notified, five-six judges from each of the earlier pairs, will revisit selected first round 1st place winners on Saturday April 10, 2021 from 8:30 -3:30PM and they will select four overall Division winners along with any special award winners. All judges' decisions are final. Judges will not be expected to critique student projects that is the teacher's role. Judging records are available to the fair's Major Sponsors and the Scientific Review Committee. With over 700 entries many of them with partners in past years, it is simply impossible to give individual feedback for each project to each participant, teacher or parent.

QUALIFIED SCIENTIST FORM: 43rd Island Wide Science Fair

This form should be signed before the start of student experimentation for all projects involving research on humans, animals, hazardous chemicals, devices or substances used as pesticides and controlled substances, molds, or pathogens, RNA, DNA, tissues. Teachers should require a project plan be turned in before approving all science projects. . GRADES 9-12 Be sure this form is attached.

Student's Name _____, Grade _____

Title of Project _____ School _____

To be completed by the Qualified Scientist: (Please print clearly or type)

Scientist's Name _____ Earned Advanced Degree _____

Contact email _____ Phone Number _____

- 1) Will non human vertebrate animals be used? 0 Yes 0 no
No vertebrate animals may die or be harmed as a result of student experimentation
- 2) Will human subjects be used?0 Yes 0 no
- 3) Will controlled or hazardous substances be used?0 yes 0 no
(includes DEA classed substances, prescription drugs, pesticides, alcohol and tobacco)
If yes,
a) Will they be used according to existing.....0 yes 0 no
local, state and federal regulations?
b) Please list the name(s) of the controlled or pesticide substance(s): _____
- 4) Will recombinant DNA be used?0 yes 0 no
- 5) Will pathogenic agents be used?0 yes 0 no
If yes, name(s) _____
If yes, will accepted procedures be used?.....0 yes 0 no
- 6) Will human blood, blood products or body fluids be used?0 yes 0 no
- 7) Will hazardous devices be used?0 yes 0 no
If yes, list or describe: _____

I certify that I have reviewed and approved an ISEF(IA) Research Plan. If the student or Designated Supervisor is not trained in the necessary procedures, I will ensure her/his training. I will provide advice and supervision during the research. I have a working knowledge of the techniques to be used by the student. The student will attach a Research Plan. If a regulated substance is used in this research, I certify that I possess a DEA license required for procuring and dispensing the substance. I understand that a Designated Supervisor is required when the student is not conducting research in my laboratory. If a pesticide or other hazardous chemical or device is used I certified that I have the appropriate certifications and that all research will be conducted under appropriate supervision. I certify that I have read the International Science and Engineering Fair Guidelines for student research and will comply with them.

Qualified Scientist's Name (Print) _____

Qualified Scientist's Signature _____ Approval Date _____

Science Research: Guidelines for Science and Engineering Fairs for a pdf copy email: youtheducationalservices@gmail.com

43rd ANNUAL ISLAND WIDE SCIENCE FAIR ENTRY FORM

DUE NO LATER THAN 5:00 P.M. Friday, March26, 2021 on line at (www.guamislantwidescience fair.org)

Name of participant: (Print or type all Information clearly)

Last Name _____ . First Name _____ Middle Initial _____

Age _____ Grade _____ (required for ISEF affiliation) Male _____ or Female _____ Ethnicity _____

Needed for mailing certificates: Home Address: _____ Village _____

ZipCode _____

Participant Home Telephone Number required for virtual judging. _____

Participant's Email Required For virtual Judging _____

Number of Participants involved in this project (1,2, or 3, in project) _____

If there is more than one participant staple together a separate entry form for each participant in the group. A maximum of 3 participants are permitted in a group. Remember projects with more than one participant cannot compete for the top overall 1st place prizes and if they win a category place only one trophy may be given due to available funding.

Name of School: _____ Email _____

Teacher's Name: _____ Telephone No. _____ Email _____

Title of Project: _____

Category to be Entered In (Circle Only One Category):

- 1. Ecology & Earth Science & Sustainability
- 2. Physical Science, Computers, & Math
- 3. Human/Medical
- 4. Plant/Animal
- 5. Chemistry
- 6. Inventions, Robotics, Energy

Explain any special needs that your project might have for set up such as water, or electricity.

I understand the following may disqualify my project or are requirements that may disqualify the school's participation:

* Contact Claudia Taitano, Fair Director at youtheducationalservices@gmail.com for more help or information about submitting your project.

*A qualified scientist form p.7 + a plan must be attached for all projects involving vertebrate animals, controlled or hazardous substances, pathogens, pesticide projects DNA, RNA, stem cells, tissues and humans and should be signed before you start your experiment. *Remember each school may submit at least one representative project for each science class in the school since it may be hard for schools to hold school fairs and more if they want to this year since we won't have to worry about getting tables.

* Students must attend or send a representative to collect trophies or prizes at the awards ceremony and wear masks.

* Press releases as to winners may only be sent out by Official Island Wide Science Fair Committee and or the UOG PIO.

* Ist round winners will be contacted for Set up for the 2nd round. Set up will be Friday April 9, 2021 from 5 P.M. -7:00P.M. on zoom and possibly at UOG, covid status permitting. Students will be notified if they need to set up.

* All projects must be set up by on Friday. No project will be accepted Saturday that has not been set up on Friday.

* The Fair is from 8:30 AM -3:30 PM Saturday April 10, 2021.

* Students must be present at 8:30 A.M. and stay until Judging concludes Saturday.

** Parents agree to waive all liability for their son/daughter's participation towards UOG, Faculty, Judges, the Sponsors and GSDS should any problems arise and agree that pictures of participants and video may be taken and used in various publications and media. There are 8 pages of the rules & forms by submitting a project, I agree to abide by them.

Participant's Signature _____ Date _____

Teacher's Signature _____ Date _____ Parent's Signature: _____ Date _____