

GSDSEF NewsNote

Greater San Diego Science and Engineering Fair

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Director's Cut

GSDSEF 2002



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DIRECTOR, GSDSEF

2002 Fair

The 48th Annual GSDSEF is just around the corner, just a few weeks away, in fact! Management Committee and SAB members are busy making final arrangements and putting the wheels in motion. This is the time when science fair life gets exciting, for both the students and us. It's also busy. I like to consider it the start of a controlled chaos. It's from now to the Fair that we need all the help we can get. More on that later (see S.O.S. – column 3, this page).

As always, some things stay the same and some things change. The 3rd Annual Family Day Event will be held on Saturday, March 23. Everyone is invited to attend. Family Day is designed to show the public that science fair isn't esoteric: it's tangible and in our world every day. There will be entertainment (with some educational value!). At press time, scheduled events include (subject to change): The Biomed Shows: "Enter the World of Science" and "Slime, Scales, Feathers and Fun", the San Diego Zoo's Animal Ambassadors, Children's 10Mobile, shows sponsored by the San Diego County Water Authority, raffles and a scavenger hunt. Please come down and show your support. Join us for the day long fun! It's

great for young and old alike! Don't miss it! It'll be bigger and better than last year!

There will be some changes to the registration process this year. Size and safety checks will be done PRIOR to computer registration. All items put on display will be reviewed for adherence to the Rules and Regulations. Some things to keep in mind: backboard **must not exceed** 274 cm height (floor to top) x 76cm depth x 122cm width; **no** liquids (this includes water!) and **no** live organisms (this included plants!) can be displayed!

Growing Numbers...

We've reached our capacity! We needed a giant shoehorn to fit all 980 projects in last year's Fair and it was a tough squeeze. If we didn't have the limitations of a fixed building size, we would be even bigger this year. As our home, the Balboa Park Activity Center, can't magically transform into a larger facility, we will (for the first time) have to restrict the total number of exhibitors. Screeners have been implored to recommend only the finest projects they see (see "Holding the Line in 2002" on page 4). So, look for the top of the crop at this year's Fair!

Discussion Boards

Our website has now gone interactive! Click on "Discussions" to access the GSDSEF Discussion Boards. Forums include: The Project discuss issues regarding the science project itself; School Fair – discuss with others what is necessary to put on your own school /district fair; San Diego Science Fair – discuss the GSDSEF, everything from exhibitors to judges; Beyond GSDSEF – discuss other competitions such as JSHS, STS, CSSF, ISEF; SAB Outreach – discuss Student Advisory Board outreach

opportunities such as speaking to students and teachers. Log on to the Discussion Boards and reconnect with other former exhibitors, let teachers and students learn from your experience!

S.O.S.!!!

There are many tasks that need to be done to keep the Fair operational. Don't think that all we need are judges to help out during the Fair. We need students, parents, teachers and community members to help the Fair run as a well-oiled machine. If you've ever been to the Fair (as an adult or student), you know the Fair isn't just judging day – it's a weeklong labor of love and commitment from volunteers. You possess first hand knowledge of the fair – as a former (or current) exhibitor, parent of an exhibitor, judge, teacher – you know the great things that students get from the Fair. It's a learning experience, about science and themselves. The amount of personal growth a student goes through in doing a science fair project is astounding. You've seen it, firsthand. You see the pride in their work beam through as they talk about their project. You see them radiate with joy and pride when they walk up to accept their award. We don't only create young scientists, but self-assured, capable youths. We need your help to ensure that the students of today (and tomorrow) continue to have this opportunity.

There are many ways you can help. Not only can you donate money (which of course we would love to have!) but, even more important, donate your time. In today's world, money may not be the easiest thing to give to nonprofit organizations such as the GSDSEF, but time and effort are. Assistance is needed now (to help with screening and the processing of the "Applications for Entrance") through the end of the Fair week (Sun-

day, March 24). Please help us out for a few hours, a day, a few days or more (join the Management Committee)!

Other than serving as a judge, you don't have to be in the field of science to help. As at any other large event, many people are needed to man booths, provide direction and assistance to students, judges and visitors, provide supervision of students, help with traffic, registration (for students and judges), size/safety, lunch (for both students and judges), assist at the Awards Ceremony, and setup and teardown of the Fair itself. We are a large-scale event in San Diego with almost 1000 students, 700 judges, thousands of parents and teachers and uncounted 1000s of visitors passing through our doors, and yet we only have 20 to 30 people working at the Fair at our busiest times. We are the size of some conventions; yet don't have the people power needed to really benefit the students and visitors.

Many schools/programs require students to perform community service. We can help! We will complete any paperwork students need to provide proof of hours and service. Get your school's service clubs involved! Get your company involved! Get your church involved! Email us at volunteer@gsdsef.org or sign up on www.gsdsef.org/volunteer/app.shtml.

You and your students have reaped the benefits from us – which we are glad to give and will continue to provide – please spare a couple hours during Fair week (Tuesday, March 19 – Sunday, March 24) to make sure someone else gets that same wonderful experience! Better yet, how about helping us a little before Fair week too?

I recently heard that California students ranked last in the nation for science. Whoever comes up with these things should come to San Diego and see the GSDSEF. Our Fair gives me hope that California's ranking can turn around. It's amazing work that our students are doing. We have amazing students. Help us make San Diego the exception to the California standing!

We need science, math and engineering judges, too! Sign up at www.gsdsef.org/judges/app.shtml.

SAB SCHOLARSHIP

We are proud to announce our new **\$1500 GSDSEF Outstanding Achievement and Service Scholarship**. Active Student Advisory Board (SAB) members who have exhibited 3 or more projects at the GSDSEF are eligible. SAB members must complete an application and essay. A letter of recommendation is optional. Scholarship Finalists will be interviewed. The scholarship recipient will be announced during the Awards Ceremony at Cox Arena on March 21, 2002. Good luck to those who applied!

"He manga wai koia kia kore e whitikia." – My Trip to The New Zealand Science Fair By Jonathan Cox, Grossmont High

Arriving home exhausted, weather beaten and stubble-faced, I thought of the incredible opportunity that allowed my adventure in magnificent New Zealand

to become a reality. With an environment as varied as the fingerprints on a hand, the journey was not only a visual sensory overload, but also an intellectually stimulating exercise of the arts, mannerisms, society and customs that make far away destinations great.

My final descent into New Zealand serves as a perfect metaphor for the experience. Slicing through an enveloping, and blinding, cloud of thick, dense fog, the plane jetted past the jagged coastline and the grassy fields and came to a stop on the tarmac. The fog's proceeded from pea soup levels to a general mist that slowly disappeared, like one's breath on a cold winter day. Equally, my initial knowledge of the place was clouded. Slowly, after speaking with the locals, observing the country, reading the paper and visiting museums, the fog lifted and a new understanding was left.

I was greeted by an Auckland family of seven: four girls, a boy, and the parents. One of my first experiences was an unbelievable trip to a small section of

tropical rainforest that was almost literally in their back yard. While there, I had the opportunity to see a native fern that demonstrates a remarkable understanding of fractal geometry. Moreover, the combination of lush, green, exotic, native brush, and warm, tropical rain, create an environment only accessible in the box office to North Americans.

Later on, I was transferred to a Hamilton farmhouse, which wasn't really on a farm at all -- instead, the owners had decided to buy the house from a farmer when the husband determined he could no longer resist the charm of New Zealand country life. However, next-door was an enormous array of cows just waiting for their next milking. Most shocking about this Hamilton estate was the absolute silence, brilliant sky and gorgeous landscape. One could not help but notice the countryman's appreciation for the passing of time. People study the world around them, gaze carefully yet jovially at the night sky, and take pleasure in noting the irregular behavior of the neighbor's cows. The television consists of only five channels and no 24/7 news-inventing services. In fact, while there, the Lord of the Rings completely monopolized the news.

During the New Zealand National (and international...) Science Fair, our days were kept busy by numerous trips to many famous, and exotic, New Zealand sites. The students exhibit an incredible hospitality – just as the honest, sophisticated, and euphoric Hamiltonians had done. Many of the projects are a product of the land; they deal with agriculture and biology. The international projects, from Namibia, Taiwan, and the United States, also reflected their origin. Most surprising of all, was when I learned that the girl from Namibia was an Afrikaner – the stuff of numerous works of literature! Meeting her was like speaking to Hollywood's poster girl. To me, she was a celebrity in every sense of the word. As if the experience had not already been rewarding enough, I was privileged to receive the top international prize for my science fair project, "The Pulse FM Laser Repeater."

The second and last week was equally as exciting. I was greeted with a special Maori (the New Zealand native people) welcoming ceremony that

was used to determine whether a warrior comes in peace or war. Then, after my geothermally heated mud bath, I visited a fully realistic Maori village and meeting house for dinner and recreation. There is something to be said for cooking your food in a steaming hot, sulfur laden, geothermal vent: there is no cheaper or more natural source of cooking energy, before or since!

Finally, I wish to extend my deepest gratitude for those who made my tropical adventure possible – the Kiwanis Club of San Diego, my wonderful hosts in New Zealand and the Greater San Diego Science and Engineering Fair. The opportunities the Greater San Diego Science and Engineering fair has provided for me, in and out of school, have been tremendous. In the words of the Maori people "He manga wai koia kia kore e whitikia." or "It is a big river indeed that cannot be crossed." Indeed, the Science Fair has helped me to cross even the big ones.

WHERE DO YOU WANT TO GO?

By
**FRANCIS SONG,
LA JOLLA HIGH**

Science has always taken me to new and exciting places, both literally and figuratively. My science project in eleventh grade took me on an incredible journey through computational mathematics, but it also took me to the international science fair in San Jose, where I met some of the most brilliant people in the world, both young and old. But I never imagined that science would also take me to London nor that I would spend the best two weeks of my life there with friends from all over the world.

It was officially called the London International Youth Science Forum, and the name really said it all: we were in London, an international center of finance, culture, and learning; it was truly an international gathering of people, representing over fifty different countries all over the world; we were young, full of excitement and curiosity in anticipation of new experiences; as winners of various science competitions,

we were all united by a common interest in science that ranged from biology to quantum physics; and finally, the two weeks that we spent together was a true forum, where ideas were freely exchanged and debated. We didn't care that our residences at the London University dorms were less than optimal, or that the dorm food was close to being inedible; we simply didn't have time to consider such mundane things—we were having too much fun.

In the span of two weeks, I visited almost every landmark in and nearby London, both cultural and scientific. Indeed, my best memory from the trip is of our visit to Stonehenge, because it was also the most unorthodox. A bus had been chartered for the group's trip to Stonehenge, which was about an hour and a half ride from where we were staying. In a twist of fate, the bus was wounded fatally with a broken clutch, and many people in the forum gave up on the visit. Some of us, however, decided that it was the perfect opportunity to explore England on our own, so we rented a twelve-person van and drove ourselves up to Stonehenge. We got lost many times, and at one point discovered that we were going in the wrong direction (it didn't help that the British drive on the left side of the road!). Not only was Stonehenge worth all the trouble, the trip itself was so much fun that when it came time for us to depart at the airport, we all wished that we had gone on another road trip.

My tour of the Cavendish Laboratory at Cambridge University affected me profoundly; being in the presence of such greatness was quite overwhelming, nor did the feeling subside when some of us got to see the Rutherford Laboratory on another occasion. I still remain in contact with some of the friends I made in London. One of these friends was very much interested in astrophysics and taught me a great deal about what the universe is all about (strings!). Another, now at Princeton, was into computational evolution and game theory, and I remember the crystal clear way in which he explained many difficult topics to me. I could never forget the two weeks I spent in London, nor the friendships made there, and if this is what my life holds in the future, I can't wait to meet it.

THE STUDENT ADVISORY BOARD'S SCIENCE FAIR WORKSHOPS by Blair Beverly, La Jolla High

Just as members of the Management Committee, screeners, and others involved with the Greater San Diego Science and Engineering Fair (GSDSEF) are committed to insuring that we have a quality fair year after year, so too is the Student Advisory Board (SAB).

The SAB is the science fair honor society, composed of students who have presented projects at the GSDSEF at least three times, or twice with a strong commitment to do a third. With its members consisting of International Science and Engineering Fair (ISEF) participants, sweepstakes winners, and recipients of a wide array of special awards, the SAB is fully aware of what it takes to design and complete a phenomenal science fair project.

In the past, the SAB's primary role was to present the student perspective on issues confronting the GSDSEF. Recently however, the SAB has expanded its role to take advantage of the tremendous talent its members have to offer. In November, the group began to hold monthly workshops for students interested in learning more about how to put together a well-done project.

Aware that a science fair project is a long process that is completed in many stages, the SAB designed their workshops to correspond with the timeline that a student might have for completing a project. At their first workshop in November, the SAB focused on the planning and researching stages, discussing suggestions they had for getting project ideas and other items to keep in mind while designing an experiment. In addition to this, the SAB conveyed how beneficial the science fair experience was for them and how much of an impact it had on their lives. At their second workshop in December, proper techniques to collect and analyze data were covered, including an introduction to some common statistical tests. At their most recent workshop in January, the SAB gave an overview of how to put it

all together in the form of a notebook and display.

At each meeting, the SAB has devoted about half of the two-hour workshop to advising students individually or in groups about their projects. This opportunity for students to work with their peers is perhaps the most beneficial element of the workshops and something that the SAB enjoys doing.

The SAB has taken satisfaction from sharing their knowledge of the science fair with other students and plans to continue holding workshops in the future. To learn more about upcoming dates, talk with your science teacher or visit our website at www.sdsciencefair.org.

HOLDING THE LINE IN 2002

The 2001 GSDSEF was the biggest in our history with just under 1000 entries. While we are pleased with our growth – and wish it could continue unabated, we have reached the limits of the space available to us. WE CANNOT GROW FURTHER! In fact, we must shrink a little.

What does this mean? In order to maintain the high quality of the Fair in the face of ever-larger school fairs and the participation of many new schools each year, we have updated our list of *SCIENCE FAIR PROJECTS TO AVOID* (see below). This is not to say that these topics are automatically “OUT.” It does mean they must be done thoroughly (good background research; large sample size; multiple test runs, introduction – and control of experimental variables; extensive observations, measurements, collection and analysis of data; well-written report, etc.) if they are to be selected.

PROHIBITED PROJECTS

1. Projects in violation of GSDSEF, ISEF or California Education Code Rules and Regulations
2. Any project involving smoking/cigarettes/etc.
3. Stills of any kind (serving of alcoholic beverages also prohibited)

PROJECTS TO AVOID

1. Effect of colored light on plants (or anything else)
2. Effect of music on plants, blood pressure, study habits, learning, etc.
3. Effect of talking on plants (or anything else)
4. Mold growth
5. Crystal growth
6. Effect of cola, coffee, etc. on teeth
7. Effect of running, video games, etc. on blood pressure
8. Do we eat balanced diets? (data usually unreliable)
9. Most strength/absorbency of paper towels (and other products) tests - acceptable only with well-designed engineering test and LARGE sample size and number of test runs
10. Most consumer product testing of the "Which is best?" type approach generally without scientific merit
11. Graphology
12. Astrology
13. ESP, especially standard card test
14. Basic maze running
15. Any project that boils down to simple preference, e.g., "Which TV station is preferred by 16 year olds?"
16. Effect of color on memory, emotion, mood, taste, strength, etc.
17. Optical Illusions - especially when well-known illusions are used and sample size is limited
18. Reaction Times (catching a dropped yardstick, etc.)
19. Many male/female comparisons, especially if bias shows
20. Simple planarian re-growth demonstrations lacking introduction of experimental variables
21. Detergent vs. stain projects
22. Building of solar collectors (demonstration of known techniques and designs)
23. Most acid rain projects (Important: to be considered, thorough research into the composition of acid rain and a scientifically accurate simulation of it would be necessary.)
24. Battery life (plug in and run down type) - e.g., use of flashlights, radios, Walkman units, etc., as load is not acceptable. Resistors of known value and compatibility must be used. Voltage and current must be recorded often. Try to establish battery characteristics.
25. Basic popcorn volume tests
26. Pyramid power
27. Basic flower preservation techniques
28. Taste comparisons, e.g., Coke vs. Pepsi
29. Smelling vanilla, etc., to improve test scores
30. Sleep learning
31. Taste or paw-preferences of cats, dogs, etc.
32. Color choices of goldfish, etc.
33. Basic chromatography

Note: The GSDSEF Scientific Review Committee (SRC) reserves the right to reject projects a) in violation of the rules and regulations of the GSDSEF, International Science and Engineering Fair or California Education Code or b) deemed unsuitable for display. Their decisions are final.

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