

**2004-2005  
Science Buddies Annual Report  
June 30, 2005**

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# Executive Summary

## Organization

The Kenneth Lafferty Hess Family Charitable Foundation is a 501(c)(3) tax-exempt organization founded in 1995. In 2001, the Foundation began its sole operating program: Science Buddies. Science Buddies is located in the San Francisco Bay Area, but serves students from all over the United States.

## Purpose

Science Buddies empowers students from all walks of life to help themselves and each other develop a love of science and an understanding of the scientific method. Our innovative online programs encourage, acknowledge, and reward student research projects, and aim to increase science fair participation. With the help of the scientists and engineers who volunteer their time and expertise, we help kids improve their science literacy, and we inspire them to consider additional study or careers in science and engineering.

## Overview of Programs

Every year over two million students in the U.S. do a science research project, most commonly a science fair project. To look for help on their projects, most students turn to the Internet. Science Buddies has some of the best and most popular tools and resources available for students doing science research projects. Our overall site traffic exceeded 800,000 visitors during the 2004-2005 academic year.

Our online programs aim to maximize the value and student enjoyment of science research projects. We use our knowledge of specific student needs to develop sophisticated online tools that enable students to “reach higher” as they prepare their projects and we engage science and technical professionals in student mentoring, advising, and the development of exciting student project ideas based on current research in the specific fields of science and engineering. Our programs focus on:

- Involving science and technology professionals to interact directly and indirectly with the students, making science “real.”
- Leading students to projects that are more challenging and have higher science content than projects they might otherwise choose on their own.
- Saving students time and frustration: students WANT to use our tools because they save them time and make science research more enjoyable.

## Description of Programs

At the base of our pyramid of programs are clever software-based productivity tools and easy-to-use “how-to” materials that will reach hundreds of thousands of students during 2005. At the top of the pyramid is our Online Mentoring Program that reaches several hundred serious and deserving science students. The common theme running among all Science Buddies programs is the goal of identifying specific student needs (e.g. “I need help selecting a topic for my project”) and creating solutions (not just reading material) that actively engage students and science professionals.

**Figure 1. Science Buddies Pyramid of Programs**

Cost per Student	Number of Students	Programs		
High	100's	Online Mentoring Program		
Medium	1,000's	Ask an Expert	Cutting Edge Projects	
Low	100,000's	Topic Selection Wizard		Other Wizard Tools (coming soon)
Very low	1,000,000	How-To	Book & Supply Store (coming soon)	Teacher Resources

*Note: 2005 usage estimates are based on 2004 actual usage statistics*

### Base of the Pyramid: “How-to” resources for students and teachers

- **“How-to”** info includes step-by-step guidance, actual sample assignments, photos of science fair projects, tips for success, and self-grading guides for students. **“Teacher Resources”** include a planning guide and printable copies of our how-to information.

### Middle of the Pyramid: Interactive and engaging tools and resources

- The **“Topic Selection Wizard” (TSW)** is an immensely popular interactive tool that helps students explore different topic areas for their science fair project. During the 2004-2005 science fair season, over 215,000 students used the tool.

The TSW has two main components: the **“Interest Survey”** and the **“Interest Areas.”** First, an interview-style tool leads students through a series of questions to help them determine science fields of true interest to them. Then it analyzes their responses to provide a custom-tailored selection of Interest Areas to visit. When development is complete, each resource-rich Interest Area will describe a different field of science or engineering and will offer abstracts of projects done by students, background information for the field (e.g. vocabulary, important concepts and equations), tutorials (such as “how to solder”), safety information, and, most importantly, **“Starter Kits.”**

Starter Kits show students how to explore certain topics. Science Buddies recruits scientists and engineers to author Starter Kits, including a special category of kits called **“Cutting Edge Projects” (CEPs)**. Starter Kits help students explore the work of today's prominent scientists and engineers. Each kit includes a description of the subject matter, bibliographic references, locations of Internet-based public domain tools and/or real-time scientific data, and suggestions for experiments. Interest Areas and Starter Kits provide the background materials and support students need to create projects that are more challenging and have higher science content than projects they might otherwise choose on their own. One goal of Starter Kits is to enable scientists to engage students in scientific dialogs as well as investigations that deepen and enrich their knowledge of cutting edge research.

- **“Ask an Expert” (AAE)** is a monitored online forum staffed by volunteer scientists and talented science students who help students anywhere, on a drop-in basis, with their science fair project questions. AAE is a great way for a student to get help when they don't have a parent, teacher or another adult with the knowledge, time, resources, or desire to help them. In some underserved communities, Science Buddies may represent the only opportunity for a student to interact with a scientific professional and to get the help they need to participate in a science fair. When students have such help, they have more fun doing their science fair project, undertake more challenging experiments, learn more, and generally develop a more positive interest in science. AAE also offers a searchable database of past questions and answers so that other students and future visitors may benefit from past discussions.

### Top of the Pyramid: Individualized, personal help for students through online mentoring

- Science Buddies' flagship program, the **“Online Mentoring Program”** recruits scientists and engineers to become volunteer mentors to students working on science research projects (typically science fair projects). Participants interact over a 12- to 14-week period in the Science Buddies online mentoring environment, called the “Command Center,” a password protected and staff-monitored bulletin board designed specifically for mentoring and preparing a science fair project. (Note: this program will not be conducted during the 2005-2006 school year.)

## **Summary of the 2004-2005 Program Year**

The 2004-2005 academic year was a year of transition and new focuses for Science Buddies. We successfully conducted our flagship Online Mentoring Program for its fourth season, but this year we reduced the number of participants in the program in order to give us more time to devote to developing our newer programs: Topic Selection Wizard and Ask an Expert.

We completed an important upgrade of our Topic Selection Wizard which increased both the tool's capacity and its functionality. We also began the planning of a major effort to dramatically increase the educational content of the Topic Selection Wizard. We conducted our Ask an Expert program for the second time. Everything went smoothly as we grew participation in this program. We are pleased with how cost-effective Ask an Expert is and we are planning to grow this program significantly next school year. Highlights of our 2004-2005 accomplishments include:

- For the second year in a row, we experienced enormous gains in website traffic with over three times more visitors to our website than the prior year. There were 853,093 total visitors to our website this school year.
- Our lean organization continued to operate very efficiently and at a much lower cost per student than other prominent mentoring organizations.
- Following our pilot study last year, we successfully opened up Ask an Expert to the public. The total number of views surpassed 100,000.
- Dozens of Science Buddies participants received prizes and/or awards for their science projects or their participation in the Science Buddies Online Mentoring Program. Award listings begin on page 20 of this report.
- Awareness of Science Buddies is building among teachers. We had over 18,000 downloads this year of our teacher resources. Teachers are also sending us ideas and feedback, such as this note from a northern California teacher:

*"I am thrilled to report that my students did very well with their science fair projects this year. I attribute their success to my discovery of your Web resource and the use of your PDF materials. Out of 25 projects 20 received first place (in category) at our school site. Eight were sent on to the consortium in our area where five of the eight were awarded medals! I think your information is the best I have come upon in the more than 36 years I have been teaching. I learned so much from my experience, this year. Thank you for the support, Barbara Messmer, Roseville City School District."*

In the following pages, we report in greater detail the challenges, accomplishments, results, and feedback about our key programs during the 2004-2005 season. Overall, our programs were very successful. Of course we did find room for improvement in each of our key programs, but we were able to execute the programs smoothly and meet our major annual goals. We continue to learn a lot about how to better serve our customers, who include the students we are helping to improve their science skills and interest, the teachers we are supporting, and the many companies and professionals who serve as our partners in this mission. We are excited to embark upon the 2005-2006 season and implement our many ideas for improvement.

## **Results of 2004-2005 Programs**

### **Overall Website Traffic**

Traffic to the Science Buddies website continued to grow strongly during the 2004-2005 program year, with significant increases in all key parameters. We generate traffic effectively through a program of regular Internet advertising (with ads placed at search engines) as well as through word of mouth and through limited press coverage, such as being recognized for educational excellence and given a five-star review by syndicated national newspaper columnist Barbara J. Feldman in her column "Surfing the Net with Kids." Highlights of our website traffic this program year include:

- Visits to the site by individuals not involved in the Online Mentoring Program increased three-fold to over 794,000.
- The total number of Web pages viewed by our users increased to over 6.5 million.
- The average time a visitor spends on our site increased by 24% as did the number of pages viewed by each visitor.

**Figure 2. Science Buddies Website Traffic Summary**

Website Traffic	'02-'03 Program Year	'03-'04 Program Year	'04-'05 Program Year
Total Logins by Mentoring Program Participants	73,511	114,448	58,717
Percentage of Visitors from Mentoring Program	72%	31%	7%
Total Visits by People Not Involved in Mentoring Program	28,749	257,604	794,376
Total Visitors to Website	102,260	372,052	853,093
Total Page Views	506,560	1,861,360	6,525,371
Pages Viewed per Visitor	5.0	5.0	7.6
Bytes Transferred (GB)	7.9	40.1	143.3
Avg Session Length (Min:Sec)	4:40	5:07	6:22
Visitors Registering for the Topic Selection Wizard	387	44,708	215,353
Downloads of Teacher Resource Material	NA	11,738	18,380
International Traffic (approx. percentage of total)	--	5%	6.2%

Figure 3 shows demographics for our website. These numbers are available to us from the registration for use of the Topic Selection Wizard. If we apply these percentages to the 853,000 visitors to our site, it shows tremendously diverse usage with over 267,000 minority students using our resources. The grade level distribution contained a surprise: the large number of K-5 students doing science projects. We are now tracking this group in more detail.

**Figure 3. Science Buddies Website Demographics**

Ethnic Group	%Total
African-American	11.7%
Alaska Native	0.5%
Asian	5.0%
Asian Indian	3.0%
Caucasian	33.2%
Latino-American	7.6%
Native American	2.2%
Other	16.5%
Pacific Islander	1.3%

Grade Level	%Total
K-5	22.4%
6	14.9%
7	19.2%
8	20.1%
9	7.9%
10	5.7%
11	3.6%
12	3.5%
Adult	2.8%

## ***The Topic Selection Wizard***

The Topic Selection Wizard addresses the first and often the largest problem facing a young scientific investigator: What project should I do? The Wizard is the first in a series of tools that will make it easier for students to do meaningful science projects.

During the past year, the number of students registering for the Topic Selection Wizard increased by almost five times to over 215,000, including individuals from every state in the U.S.

## **The History of the Topic Selection Wizard**

In 2001, our founder, Ken Hess, became interested in helping kids participate in the wonderful learning experience of science fairs. Right away, he discovered that many students find selecting a topic to be the most frustrating aspect of doing a science research project. He designed and programmed the Topic Selection Wizard to help students with this vexing problem. At first, use of this tool was limited to participants in an online science mentoring program which we conduct. But during the 2003-2004 school year, we decided to make the Topic Selection Wizard available to the general public.

We thought, "Here is this tool that our participating teachers and students love—why limit it to only those students we can accommodate in our Online Mentoring Program?" We were thrilled and delighted to see that with only minimal Internet advertising, thousands of students were coming to our website from all over the U.S. and using the Topic Selection Wizard.

Within a few months, the Topic Selection Wizard tool became more popular than the mentoring program itself—in fact, vastly more popular. It launched us onto a national scale and led us to develop new, ancillary programs, taking us in an exciting new direction and putting us in a position to help hundreds of thousands of students from all walks of life improve their science literacy.

We came to realize that we could reach 10 times as many students with the Topic Selection Wizard as we could through our mentoring program (and we could do so more cost-effectively). So last summer, we made plans to increase our advertising of the Topic Selection Wizard and also to improve the capacity and functionality of the tool itself.

## **Topic Selection Wizard 2004-2005 Upgrade Project**

With funding from The American Honda Foundation, Lam Research, and Synopsys, we successfully upgraded the Topic Selection Wizard. The new version first launched to the public in September 2004 (and additional improvements were completed and released throughout the fall). We met the following key goals for the Topic Selection Wizard upgrade project:

- Our first goal was to increase the capacity of the tool such that it could sufficiently handle student traffic of 150,000 or more students during the 2004-2005 school year. We exceeded this goal. The tool easily handled over 215,000 users throughout the school year, and we did not experience any major service interruptions or other problems. During our peak month, January, we had 50,000 registrants. We are extremely pleased with both the traffic and the system's ability to handle all the students who want to use the Topic Selection Wizard.
- Our second goal was to improve the tool's ability to help students choose project topics by increasing the number of "fields of science" presented from six to approximately 25. We met this goal by increasing to 22 the number of fields offered by the Topic Selection Wizard.
- Our third goal was to improve the tool's ability to help students narrow down an interest in a topic area into a specific question by dramatically increasing the number of sample projects available to display to the student from a few dozen to well over a hundred. We met this goal by increasing to 142 the number of sample projects offered by the Topic Selection Wizard.
- Our fourth goal was to increase student satisfaction ratings as measured by the post-usage survey. Some of the changes we made during this upgrade caused an unexpected but significant drop in the number of students who find and complete the post-usage survey. Unfortunately, the survey results are no longer statistically significant. In the coming year, we have plans to replace this survey with several other, better mechanisms for measuring not only student satisfaction but also the impact of the Topic Selection Wizard on the quality of student projects. Meanwhile, we have good anecdotal evidence, such as e-mails and testimonials from students, parents, and teachers, that our Topic Selection Wizard is meeting or exceeding the expectations of our participating students.

## Topic Selection Wizard Assessment & Future Plans

Our enhancements to the Topic Selection Wizard enable us to track each individual through every step of the process, recording how much time they spend at each point and the decisions they make. This gives us an unprecedented ability to study yield improvement and address weaknesses. Beginning this summer, we will undertake a thorough evaluation of the past year's data, and construct a plan for the next round of improvements to this tool.

**Figure 4. Registrants for the Topic Selection Wizard by State or Region (in alphabetical order by state)**

State	Registered Users	% of Total	Index of Usage Per Capita (100 = Avg)	Population
Alaska	693	0.41%	190	643,786
Alabama	1,758	1.04%	69	4,486,508
Arkansas	1,798	1.07%	117	2,710,079
Arizona	3,150	1.87%	102	5,456,453
California	23,107	13.73%	116	35,116,033
Colorado	2,555	1.52%	100	4,506,542
Connecticut	1,730	1.03%	88	3,460,503
District of Columbia	797	0.47%	246	570,898
Delaware	325	0.19%	71	807,385
Florida	9,292	5.52%	98	16,713,149
Georgia	4,094	2.43%	84	8,560,310
Hawaii	507	0.30%	72	1,244,898
Iowa	701	0.42%	42	2,936,760
Idaho	442	0.26%	58	1,341,131
Illinois	7,224	4.29%	101	12,600,620
Indiana	3,531	2.10%	101	6,159,068
Kansas	1,422	0.84%	92	2,715,884
Kentucky	2,256	1.34%	97	4,092,891
Louisiana	2,495	1.48%	98	4,482,646
Massachusetts	6,089	3.62%	167	6,427,801
Maryland	4,379	2.60%	141	5,458,137
Maine	1,233	0.73%	168	1,294,464
Michigan	4,838	2.87%	85	10,050,446
Minnesota	1,846	1.10%	65	5,019,720
Missouri	2,658	1.58%	83	5,672,579
Mississippi	1,912	1.14%	117	2,871,782
Montana	691	0.41%	134	909,453
North Carolina	4,245	2.52%	90	8,320,146
North Dakota	328	0.19%	91	634,110
Nebraska	455	0.27%	46	1,729,180
New Hampshire	532	0.32%	74	1,275,056
New Jersey	5,234	3.11%	107	8,590,300
New Mexico	1,204	0.72%	114	1,855,059
Nevada	862	0.51%	70	2,173,491
New York	13,186	7.83%	121	19,157,532
Ohio	6,003	3.57%	93	11,421,267
Oklahoma	1,884	1.12%	95	3,493,714
Oregon	1,557	0.93%	78	3,521,515
Pennsylvania	5,592	3.32%	80	12,335,091
Puerto Rico	188	0.11%	8	4,000,000
Rhode Island	474	0.28%	78	1,069,725
South Carolina	3,395	2.02%	146	4,107,183
South Dakota	368	0.22%	85	761,063
Tennessee	3,757	2.23%	114	5,797,289
Texas	14,133	8.40%	114	21,779,893
Utah	2,021	1.20%	154	2,316,256
Virginia	4,668	2.77%	113	7,293,542
Vermont	395	0.23%	113	616,592
Washington	3,072	1.83%	89	6,068,996
Wisconsin	2,262	1.34%	73	5,441,196
West Virginia	780	0.46%	76	1,801,873
Wyoming	201	0.12%	71	498,703

## Overview of the Topic Selection Wizard Content Development Project

The development of new content for the Topic Selection Wizard and the continuing improvement of the Topic Selection Wizard will be the most important program objective for Science Buddies in the next two years. The project will involve considerable staff time as well as collaboration with partners in academia and industry. We estimate the total effort will cost \$375,000 over two years. Improvement goals include:

- Add at least 200 Starter Kits for grades 6-12, nearly tripling our existing number of project ideas and Starter Kits to approximately 325. New content will include submissions from science professionals and students, as well as those prepared by the Science Buddies staff.
- Develop approximately five new Interest Areas for fields such as sports science, computer engineering & programming, and robotics.



- Ensure that each of our Interest Areas offers a solid overview of the field and a collection of sample projects and Starter Kits (currently some Interest Areas are under-developed relative to the best ones).
- Develop a new mechanism for measuring the impact of the Topic Selection Wizard on project quality.
- Add Starter Kits and other materials appropriate for students not yet trained in the scientific method (typically grades K-5).

### The Rationale for Starter Kits

With research advancing so quickly in so many fields, it is extremely difficult for science teachers to keep pace with the developments. Meanwhile, the Internet now makes it possible for anyone to download real-time data from scientific equipment, tap into sophisticated scientific databases, and even control advanced experimental apparatus. All that is missing is some guidance that allows those of us who aren't experts in the field to explore this exciting new world. Starter Kits provide the introductory information teachers and students need to utilize the tools and resources of today's prominent scientists and engineers, all made available over the Internet. Starter Kits are much more robust than the sample projects that are currently available in the Topic Selection Wizard.

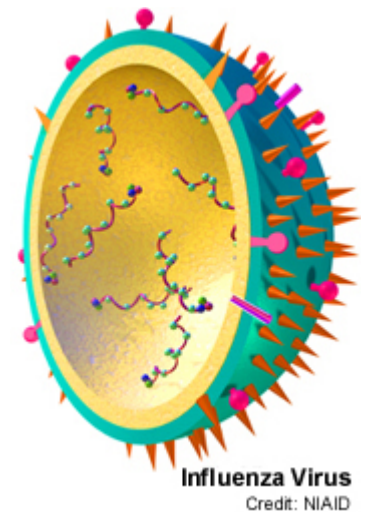
Students benefit greatly from being able to study topics that are fresh and relevant. But without introductory materials for both teachers and students, many public domain tools and data are so arcane that they will scare away all but a very small number of pre-college students and teachers. Science Buddies' Starter Kits are designed to open up the study of all fields of science, including cutting edge topics, to a diverse audience of students, including those who attend schools in underserved communities.

For example, the Starter Kit called "BLASTing Flu Viruses" takes a topic that often makes news and gives students the background knowledge they need to experience the cutting edge research scientists use each year in the global battle against deadly influenza. With this Starter Kit, students learn to use a free, Web-based computer tool called BLAST to analyze and estimate the effectiveness of different flu vaccines. They learn about influenza, flu notation, vaccines, viruses, DNA and DNA sequence, sequence alignment, and other concepts.

Working with scientists and engineers who want to reach out to the public, share their work, and promote their field, Science Buddies is growing its collection of Starter Kits in a variety of fields. We have partnerships underway at several universities and companies and are actively seeking new partners.

We are working hard to develop Starter Kits and other educational content for each Interest Area. Right now, we have 22 Interest Areas in various stages of development. The average Interest Area will receive around 25,000 student visitors per year. Most students who visit an Interest Area on our website have a strong interest in that field. Once a topic is chosen, the average student will spend over 40 hours doing their project, including research, prototyping, and presentation.

We believe that Starter Kits are also a new way to get students truly excited about science. Because of a lack of media coverage and a general lack of awareness, there are many scientific discoveries and new fields of research that have the potential to excite a generation (e.g. the unraveling of the human genome or the Cassini-Huygens mission to Saturn) but haven't yet been able to do so. We dare not hope to recreate the level of fascination and interest generated by the race to the moon of the late 1960s, but with the right "marketing" to science students, we can certainly have a very positive and very significant influence. If we can help science students get easy access to real-life data and public domain tools, and somebody could explain, at their level, what these things mean, how they work, and how students could use them for their own projects. Kids could aspire to studying topics that are far more interesting and novel than the stale experiments and topics many of them settle for right now without guidance or inspiration.



A small number of Starter Kits are already available on our website, particularly in the Genomics Interest Area, which was developed through a partnership with the Molecular Sciences Institute (MSI) in Berkeley, CA. The Genomics Starter Kits have helped many students develop interesting and challenging science projects. Pictured at right is Kristina Daniels, a California high school student who used the Science Buddies Starter Kit “Protein Sequences and the Tree of Life” to develop her own research project which examined whether evolutionary family trees for turtle species created based on morphological characteristics prior to the discovery of DNA are accurate to evolutionary trees made using DNA. Miss Daniels won first place in the upper division Biochemistry and Microbiology at the 2004 Synopsys Silicon Valley Science and Engineering Championship. She also won the award for Best Genomics Presentation from the Molecular Sciences Institute, an online contest we devised to help us track how students were using the Starter Kit materials.



A key aim for the Starter Kits we will develop, whether they introduce a fundamental concept or a topic on the cutting edge of a new field, will be to help students improve the science content and overall quality of their science research projects. During the 2005-2006 school year, we will be putting methods in place to evaluate and track the quality of work students are doing using our Starter Kits.

### **Ask an Expert (AAE)**

“Ask an Expert” is an online bulletin board staffed by volunteer scientists, engineers, and talented science students who offer their help with anyone and everyone's science fair project questions. This program started as an experiment to determine the demand for answers to “walk up” questions—answers which can be provided to a larger number of students at a much lower cost than our Online Mentoring Program. At the same time, Ask an Expert presents a volunteer opportunity that offers even more convenience and takes less time than our Online Mentoring Program. For the 2004-2005 academic year, we had a staff of 18 volunteers staffing the Ask an Expert Forum, each taking a weekly time slot as their "shift." We divided AAE into three sub-forums where students can post their questions: Physical Science and Math, Life, Earth, and Social Sciences, and Preparing for the Science Fair, which addressed questions about judging, how to set up a display board, preparing a presentation, preparing for interview questions, etc. Overall, we saw very positive results and clearly witnessed a huge demand from students who seek answers to their “walk up” questions as well as from those who are interested in looking at the responses to questions posted by their peers.

**Figure 5. Summary of Ask an Expert Traffic**

	Count 2003-2004	Count 2004-2005	Percent Increase
Number of Unique, Registered Users	390	928	138%
Number of Registered Users Making Post(s)	108	255	136%
Total Number of Questions Asked	122	332	172%
Total Number of Replies	206	768	273%
Total Number of Times Posts Viewed (one view of one post counts as one)	7,664	107,686	1,305%

**Figure 6. Analysis of Questions in Ask an Expert**

<b>Analysis of Questions</b>	<b>Count</b>	<b>Percentage</b>
Difficulty of the Question*		
Easy	56	17%
Medium	169	51%
Hard	87	26%
Not Applicable	20	6%
Average (Median) Response Time Per Post	15.9 hours	
Number of Replies Per Topic		
1-3 Replies	283	85%
4-6 Replies	29	9%
7+ Replies	20	6%
Average Number of Replies Per Topic	2.3	
Average Number of Views Per Topic	324	

\*Note: For the purpose of analysis and tracking the types of questions that students posted, we broadly defined a scale for the difficulty of the questions posted in the Ask an Expert Forum. Easy questions represent those that we think someone with an undergraduate degree in science or engineering can answer with little additional research, medium questions correspond to those that would require the responder to conduct no more than 15 minutes of research (online, old textbooks, articles, etc.) if he or she is not an expert or professional in the area, and difficult questions generally require more than 15 minutes of research and/or the knowledge and expertise of someone who has extensive experience in the area.

**Figure 7. Summary of Questions in Ask an Expert**

<b>Category of Question Asked*</b>	<b>Count 2003-2004</b>	<b>Percentage</b>	<b>Count 2004-2005</b>	<b>Percentage</b>
Need topic for their project [We redirect these to Topic Selection Wizard.]	10	8%	20	6%
Is <blank> a good topic idea?	3	2%	2	1%
Need topic within a certain category/help narrowing down the topic	19	16%	34	10%
Need help locating information about topic	9	7%	20	6%
Specific question about an aspect of their project	52	43%	198	60%
Help with technical/logistical aspect of putting together the project (e.g. boards and supplies)	5	4%	21	6%
Need folks to interview or fill out a questionnaire for their project (sometimes they just directly posted the interview questions)	4	3%	5	2%
Other	5	4%	24	7%
Duplicate questions by the same person, other user errors	15	12%	8	2%

\*Note: As a part of our 2004-2005 website improvement plan, we built an introductory page for Ask an Expert that directed students with various needs to the appropriate sections of our website. For example, with the click of a button, students who are seeking topics for their project arrive at our Topic Selection Wizard homepage. Our goal is to reserve the valuable time and resources of our AAE volunteers for those students who are seeking help on specific project-related questions, rather than students with issues that can be effectively handled by our online tools.

### **Ask an Expert Assessment & Future Plans**

Drawing upon the success of Ask an Expert this year, we plan to further expand the program during the 2005-2006 program year. One idea we have in mind is to invite even more older, experienced high school students to serve on the staff in addition to adult professionals. Another idea is to offer private AAE forums as virtual classrooms for select teachers or groups such as science clubs. Under this hybrid program, students will enjoy the benefit of personalized and structured mentoring but at a much reduced cost per student compared to the Online Mentoring Program.

We will be testing this new program, tentatively called the Ask an Expert Mentoring Program, during the 2005-2006 school year with a few middle and high schools. For the pilot program, we will match together groups of 5-10 Experts (composed of science professionals and top high school science students) with smaller groups of 20-25 students doing individual science fair projects. The idea of the Ask an Expert Mentoring Program is to create fun online science communities where engaged students can receive the mentoring support that they need/want and those students that are less engaged can still benefit by reading or observing the information that is exchanged with their peers. The Experts will use

a private online discussion board to provide mentoring support for a class of students by answering questions, reviewing work, and offering general support for the students working on their science fair project.

### **Online Mentoring Program (OMP)**

In 2004-2005, we successfully conducted our flagship Online Mentoring Program for its fourth season, but this year we reduced the number of participants in the program in order to give us more time to devote to developing our newer programs: Topic Selection Wizard and Ask an Expert. Even with our reduced emphasis on the OMP this year, we saw the quality of the program increase with the implementation of improved teacher screening, more efficient administrative agenda, and more streamlined operational procedures. For example, teachers in the 2004-2005 program enjoyed a high level of communication and close-knit collaboration with the Science Buddies staff. We sent each teacher a weekly activity report that tracks the participation and assignment progress of each individual student, and every effort is made to ensure that no student is left behind. With each teacher report, we also followed-up with the individual teachers to be in sync with the various classroom issues and informed our volunteers as appropriate. The following results show an improvement in all key parameters that we track as well as a higher level of engagement among all participants.

### **Online Mentoring Program Recruiting and Training**

We screened the teachers of the Investigators for commitment, responsiveness, and the other criteria listed above. If a prospective Mentor met our basic requirements for science education, we relied on our online training and qualifying test as a screen.

For our adult Advisors we required a science or technical undergraduate degree. In addition, every Advisor had to pass a background check performed by the firm VolunteerSelect, a division of ChoicePoint, and complete our online training.

**Figure 8a. Summary of Recruiting & Screening (see Participating Schools & Employers for additional info)**

	Investigators				Mentors				Advisors			
	2003-2004		2004-2005		2003-2004		2004-2005		2003-2004		2004-2005	
	Count	% Apps	Count	% Apps	Count	% Apps	Count	% Apps	Count	% Apps	Count	% Apps
Applicants	465	100%	157	100%	461	100%	180	100%	386	100%	145	100%
Rejected	2	0%	0	0%	0	0%	6	3%	0	0%	0	0%
Dropped out before assigned to a team	30	6%	4	3%	135	29%	22	12%	43	11%	12	8%
Active status but not assigned to a team	21	5%	0	0%	23	5%	3	2%	45	12%	15	10%
Total assigned to a team	412	89%	153	97%	303	66%	149	83%	298	77%	118	81%
Removed from program	16	3%	11	7%	35	8%	22	12%	22	6%	3	2%
Voluntarily dropped out	35	8%	8	5%	4	1%	2	1%	4	1%	5	3%
Active status at end of program	361	78%	134	85%	264	57%	125	69%	272	70%	110	76%
		<b>% of Active</b>		<b>% of Active</b>		<b>% of Active</b>		<b>% of Active</b>		<b>% of Active</b>		<b>% of Active</b>
Public school	190	53%	134	100%	203	77%	103	82%	--	--	--	--
Private school	171	47%	--	--	61	23%	22	18%	--	--	--	--
Male	157	43%	70	52%	99	38%	46	37%	171	63%	70	64%
Female	204	57%	64	48%	165	63%	79	63%	101	37%	40	36%

**Figure 8b. Summary of Recruiting & Screening (by grade, fair experience, GPA)**

	Investigators				Mentors			
	2003-2004		2004-2005		2003-2004		2004-2005	
7 <sup>th</sup> Grade	153	42%	26	19%	--	--	--	--
8 <sup>th</sup> Grade	81	22%	36	27%	--	--	--	--
9 <sup>th</sup> Grade	79	22%	69	51%	15	6%	11	9%
10 <sup>th</sup> Grade	48	13%	3	2%	48	18%	17	14%
11 <sup>th</sup> Grade	--	--	--	--	118	45%	42	34%
12 <sup>th</sup> Grade	--	--	--	--	81	31%	55	44%
Other / Not Applicable	--	--	--	--	2	1%	--	--
Previous Fair Experience	--	--	--	--	188	71%	103	82%
Average GPA	--	--	--	--	3.86	--	4.00	--

### Online Mentoring Program Results

The 2004-2005 Online Mentoring Program continued to see various improvements. For example, levels of participant engagement were higher, a higher percentage of students entered city/county-wide science fairs, and a much higher percentage of students won awards. Higher level fairs (beyond class or school level fairs) offer students a chance to meet others with the same interests, compare their work to others, win prizes, and progress to even more prestigious fairs. They also offer a hook to keep students involved in science throughout high school.

**Figure 9a: Science Fair Results**

Science Fair Results	Investigators				Mentors			
	2003-2004		2004-2005		2003-2004		2004-2005	
	Count	% of Active	Count	% of Active	Count	% of Active	Count	% of Active
Completed project	361	100%	134	100%	--	--	--	--
Entered city/county-wide science fair	51	14%	80	60%	18	7%	10	8%
Won an award at city/county-wide fair	46	13%	59	44%	16	6%	10	8%
Reached regional fair	3	1%	4	3%	0	0%	0	0%
Competed at a state science fair	0	0%	4	3%	1	0%	3	2%
Won an award at a state science fair	0	0%	4	3%	1	0%	3	2%
Competed at the Intel International Science & Engineering Fair (ISEF)	--	--	--	--	2	1%	6	5%
Won an award at the Intel International Science & Engineering Fair (ISEF)	--	--	--	--	0	0%	4	3%
Won an award at the Intel Science Talent Search (STS)	--	--	--	--	1	0%	4	3%
Won an award at the Siemens Westinghouse Competition	--	--	--	--	2	1%	4	3%

**Figure 9b: Level of Engagement\***

	Investigators				Mentors				Advisors			
	2003-2004		2004-2005		2003-2004		2004-2005		2003-2004		2004-2005	
Never engaged (0 postings)	2	1%	1	1%	1	0%	2	2%	0	0%	0	0%
Minimally engaged (1-10 postings)	87	24%	14	10%	54	21%	32	26%	55	20%	13	12%
Highly engaged (>10 postings)	269	75%	119	89%	206	79%	91	73%	217	80%	97	88%
Average number of postings (Note 4)	25.5	--	29.6	--	23.3	--	23.0	--	25.0	--	28.7	--

\*Note: Level of Engagement is an indicator of whether participants actively and productively communicated with teammates, measured by the count of messages and assignments posted. The Investigators who minimally or never engaged mainly worked on teams where their partners did most of the communicating, which we allowed. We also assigned Mentors who signed up late to serve as second Mentors/observers on team and as a result, they didn't post many messages. To be highly engaged, a participant had to initiate a minimum of 11 postings, and some participants exceeded 100 postings.

### Online Mentoring Program Assessment

For the third consecutive year, we administered a science knowledge assessment test both at the beginning as well as at the end of the program. The test measured knowledge of the scientific method and experimental procedures, allowing us to assess what students learned during the program.

Results show that the students involved in the program improved their science knowledge over the course of the program, with a 7% overall improvement. Girls experienced a bigger improvement than the boys at 10% vs. 4%. Eighth graders made the greatest improvement in their acquisition of new knowledge, with an average score of 78% in the post-season compared to 70% in the pre-season, an 11% boost. Also, the school-by-school analysis shows that students from underserved communities (includes Bohannon, Carquinez, Columbia, and Lawton schools) all made significant improvements.

**Figure 10: Results of Science Knowledge Assessment\***

	Pre Test Science Knowledge (0-12)	Post Test Science Knowledge (0-12)	% Improvement
Overall Average	9.26	9.90	7%
<b>By Gender:</b>			
Male Average	9.62	10.04	4%
Female Average	8.91	9.75	10%
<b>By Grade:</b>			
7 <sup>th</sup>	8.79	9.17	4%
8 <sup>th</sup>	8.42	9.33	11%
9 <sup>th</sup>	10.00	10.67	7%
10th**	11.00	10.33	-6%
<b>By School:</b>			
Bohannon Middle	8.13	9.50	17%
Carquinez Middle	8.73	9.64	10%
Columbia Middle	7.25	8.25	14%
Dempsey Middle (OH)	9.35	9.26	-1%
Langley High (VA)	11.14	11.14	0%
Lawton Alternative	7.67	9.17	20%
Monte Vista High	10.57	11.07	5%
Plainview Old Bethpage John F. Kennedy High (NY)	8.83	9.83	11%
San Ramon Valley High	9.68	10.50	8%

\*Note 1: The table above compares identical data sets in the pre-season versus post-season with a sample size of 105 Investigators.

\*\*Note 2: There were only three active 10th grade participants in the program.

## Online Mentoring Program Mentor & Advisor Survey

Over 60% of all Mentors and Advisors completed an online survey at the conclusion of the 2004-2005 program year. The survey measured overall satisfaction with the program as well as desired areas of improvement. The table below summarizes some key responses:

Figure 11. Selected Mentor and Advisor Survey Responses\*

Question	Mentors				Advisors			
	Mentors 2001-2002	Mentors 2002-2003	Mentors 2003-2004	Mentors 2004-2005	Advisors 2001-2002	Advisors 2002-2003	Advisors 2003-2004	Advisors 2004-2005
Why did you sign up for Science Buddies?								
Enjoy science	75%	70%	71%	79%	--	78%	77%	88%
"Give back" to the community	50%	74%	79%	70%	--	82%	83%	86%
Fun	100%	81%	76%	82%	--	78%	63%	65%
Enjoy young people	--	83%	84%	85%	--	80%	80%	87%
Help on college apps	58%	70%	62%	51%	--	--	--	--
Would participate again?	92%	95%	88%	90%	100%	94%	83%	88%
Would recommend Science Buddies to a friend?	92%	92%	94%	89%	100%	89%	88%	90%
How much time did you spend on average?	80 min/wk	78 min/wk	67 min/wk	78 min/wk	107 min/wk *	55 min/wk	54 min/wk	60 min/wk
Skill level of Investigator greater than expected	--	13%	16%	26%	--	11%	12%	10%
Skill level of Investigator less than expected	--	35%	27%	21%	--	41%	45%	30%
Science Buddies training was adequate	--	81%	79%	74%	--	87%	81%	87%
Investigator's project was better than it would have been w/o your help?	58% yes	87% yes or maybe	91% yes or maybe	82% yes or maybe	67% yes	85% yes or maybe	83% yes or maybe	84% yes or maybe
Overall experience (on 5.0 scale)	--	3.7	3.4	3.7	--	3.5	3.2	3.5

\*Note: All Advisors had more than one team during the 2001-2002 program.

## Selected Participant Feedback (All Programs)

"[The Science Buddies Online Mentoring Program] helped me achieve my goal of winning a prize at the science fair." — Comment from an Investigator.

"I got expert advice on what I needed to do." — Comment from an Investigator.

"The entire process was very rewarding. I was so proud of my Investigator for completing her very first science fair project (and doing quite well on it, I might add)." — Comment from a Mentor.

"I felt that this program was a great way of inspiring younger kids to be interested in science. It also gave me great satisfaction to know that I was able to help develop this interest." — Comment from a Mentor.

"Science Buddies is a great program, and I do not miss a chance to tell people about it." — Comment from an Advisor.

"The Investigators were genuinely interested in using the Advisor and Mentor to improve their project. They wanted feedback and help all along the way so it is good to feel wanted and needed and that they put enough trust in us to help them. " — Comment from an Advisor.

"The best thing is helping kids understand the concepts of science and how to conduct experiments. I got the most satisfaction by knowing that my Investigators had the tools to perform the experiments on their own and be able to present their project at the science fair. That they had fun while participating in the science fair." — Comment from an Advisor.

"Thanks for your great website. It will help me in preparing my child for next year's 4th grade science, and will help him in his work." — Comment from a home school teacher.

"Just a note to say thanks for the information about how to formulate a question to fit the scientific method of experimentation. My daughter is in third grade and is starting a science fair project, but was not given much info about how to do this, so as a parent trying to help her, this site proved very helpful." — Comment from a parent.

"Thanks so much for a great website. We are parents of students at Pierce Elementary School in Newton, Massachusettes (Public, K-5). We are about to launch a weekly after school science club, which will culminate in a science fair. We will be using some of your materials with the older kids (25 kids, grades 3-5). We will be teaching them about the scientific method and helping them understand how one gets from an area of interest all the way to an actual experimental protocol. We will then help them develop and execute a project, either of their own choosing, or from a list that we have generated. Your materials have really helped us think about how to teach them, and we expect our students will like them, too. Thanks!!" — Comment from a parent.

"Thank you so much!!! My science fair project is due in two days and I really needed this information. It is exactly what I was looking for! Thanks again for the quick response!" — Comment from a visitor of the Science Buddies website.



Science Buddies participants from Carquinez Middle School in Crockett, Calif., pose at their science fair in January 2005 with Shijun Liu of Science Buddies (far right) and Kelly Berman of sponsor company Bio-Rad Laboratories (far left).



# Student Awards & Recognition

## Science Buddies Awards to Investigators

Science Buddies gives out two tiers of awards to recognize the few exceptional students who have put in the extra effort and commitment to succeed on their projects. We hope that these students will serve as role models to their peers and continue to strive for excellence in science in the future. Each Outstanding Investigator Award and Honorable Mention Award winner received a personalized certificate, an award letter from Science Buddies, and a prize. Outstanding Investigator Award winners each received a Logitech Twin-Pack BuddyCam Web camera package, sponsored by Logitech, and Honorable Mention Award winners each received a \$20 Old Navy gift card, sponsored by Gap, Inc. All other participants who completed their projects received a Science Buddies Certificate of Appreciation in recognition of the time and effort they put into their projects. In addition, three students won cash awards in the openly publicized 2005 Best Genomics Presentation Competition, sponsored by the Molecular Science Institute (\$750 for 1st Place, and \$250 for 2nd Place).

School	Student Name	Award
<b>Bohannon Middle School</b>	Wilson Zhang (Team Guesde)	Outstanding Investigator Award
<b>Carquinez Middle School</b>	Benjamin Martinez (Team Debye)	Outstanding Investigator Award
	Sanjit Rai (Team Dehmelt)	Outstanding Investigator Award
	Jenay Ross (Team Desargues)	Honorable Mention Award
<b>Dempsey Middle School</b>	Elizabeth Newcomb (Team Cormack)	Outstanding Investigator Award
	Benjamin Steele (Team Crookes)	Outstanding Investigator Award
	Nicholas Caudill (Team Broglie)	Honorable Mention Award
	Robert Homan (Team Cockcroft)	Honorable Mention Award
<b>Langley High School</b>	Robert Kim (Team Doppler)	Honorable Mention Award
<b>Lawton Alternative School</b>	Jessi Miao (Team Galvani)	Honorable Mention Award
<b>Mills High School</b>	Michelle Chiu (Independent)	2nd Place Molecular Science Institute Best Presentation Award
<b>Milpitas High School</b>	Kathryn Daniels (Independent)	1st Place Molecular Science Institute Best Presentation Award
	Kristina Daniels (Independent)	1st Place Molecular Science Institute Best Presentation Award
<b>Monte Vista High School</b>	Jeffrey Joh (Team Binnig)	Outstanding Investigator Award
	Lauren Ho (Team Bethe 2)	Honorable Mention Award
	Kathleen Kimball (Team Bloch)	Honorable Mention Award
	Christine Lee (Team Bethe 2)	Honorable Mention Award
	Shirley Liao (Team Bethe 2)	Honorable Mention Award
	Tuhin Roy (Team Bloch)	Honorable Mention Award
<b>San Ramon Valley High School</b>	Kristina Benvenuto (Team Ampere)	Outstanding Investigator Award
	Melanie Bowman (Team Bartram)	Outstanding Investigator Award
	Melissa McCormack (Team Avogadro)	Outstanding Investigator Award
	Angela Meng (Team Avogadro)	Outstanding Investigator Award
	Kirstin Miller (Team Banks)	Honorable Mention Award

## Science Buddies Awards to Mentors

Science Buddies also gives out two tiers of awards to recognize the exceptional Mentors in our Online Mentoring Program who have went above and beyond their call of duty. Each Outstanding Mentor Award winner received a personalized certificate, an award letter, and a \$300 scholarship sponsored by Motorola and the Science Buddies Advisors' Scholarship Fund. This year, we also presented a \$500 scholarship and an Outstanding Mentor Award with Distinction to Terik Daly from Oak Grove High School as a show of appreciation for his dedication to the program. In addition to being an excellent Science Buddies Mentor in both the Online Mentoring Program and Ask an Expert, Terik's own science fair project, "The Derivation and Interpretation of Geochemical Ratios Generated by Meteoritic Impact," won the Project of the Year Award at the California State Science Fair, which Science Buddies Annual Report 2004-2005

includes a \$10,000 cash award. Honorable Mention Award winners each received a personalized certificate, an award letter, and a Logitech Twin-Pack BuddyCam Web camera package, sponsored by Logitech. All other Mentors who completed the program received a personalized letter detailing their involvement in the 2004-2005 program, including the number of hours spent online, to be counted toward their community service requirement at their schools.

School	Student Name	Award
<b>California Academy of Mathematics and Science (CAMS)</b>	Vianni Luhrsen (Team Cormack)	Outstanding Mentor Award
<b>California High School</b>	Stephen Tye (Team Esaki)	Honorable Mention Award
<b>De La Salle High School</b>	William Milcovich (Team Cuvier)	Honorable Mention Award
<b>El Cerrito Senior High School</b>	Lalithra Fernando (Team Guillaume)	Honorable Mention Award
<b>Hillsdale High School</b>	Calvin Ting (Team Bragg)	Outstanding Mentor Award
<b>Mills High School</b>	Michelle Chiu (Team De Gennes)	Outstanding Mentor Award
<b>Mission San Jose High School</b>	Jessica Lin (Team Galois)	Outstanding Mentor Award
<b>Monte Vista High School</b>	Mona Vakilifathi (Team Avogadro)	Honorable Mention Award
	Anna Rankov (Team Davisson)	Honorable Mention Award
	Patricia Lee (Team Broglie)	Honorable Mention Award
<b>Oak Grove High School</b>	Terik Daly (Team Condon)	Outstanding Mentor Award with Distinction
<b>Plainview Old Bethpage JFK High School</b>	Benjamin Pollack (Team Guesde)	Outstanding Mentor Award
	Rachel Davidowitz (Team Beth 2)	Outstanding Mentor Award
<b>Rutherford B. Hayes High School</b>	Kathryn Exline (Team Compton)	Honorable Mention Award
	Sam Bobb (Team Cooper)	Honorable Mention Award
<b>Sherwood High School</b>	Rory Fifield (Team Debye)	Outstanding Mentor Award
<b>Somerville High School</b>	Kavya Gorukanti (Team Galileo)	Honorable Mention Award
<b>Stevenson School</b>	Amber Hess (Team Fowler)	Outstanding Mentor Award

### City and County Science Competition Winners

Jillian Armstrong, Investigator from Team Alfven (Advisor- Heinz Hemken)

"If the environment of newt eggs and young developing newts varies with the food provided they will develop at different rates and their appearance will slightly be different."

Tri-Valley Science and Engineering Fair, San Ramon, CA  
- 2nd Place in Category

Ryan Atterbury, Alexander Zielinski, Investigators from Team Altman (Mentor- Andrew Leung, Advisor- Geoff Bruton)

"How do epiphytes respond to being grown in the ground as opposed to being grown in the air?"

Tri-Valley Science and Engineering Fair, San Ramon, CA  
- 2nd Place in Category

Janessa Baccay, Investigator from Team d'Alembert2 (Mentor- Jenna Pacelli, Advisor- Alyssa Quon)

"How does the distance of the creek affect the contents of the creek?"

Carquinez Middle School Science Fair, Crockett, CA  
- 1st Place in Category (7th Grade)

Suzanne Batiste, Amanda Crisafulli, Tonya Yan, Investigators from Team Alvarez (Mentor- Bridget Botelho, Mentor- Marissa Goldblatt, Advisor- Shaema Talib)

"How does exposure to a computer screen effect ones vision?"

Tri-Valley Science and Engineering Fair, San Ramon, CA  
- Honorable Mention Award in Category

Kristina Benvenuto, Investigator from Team Ampere (Mentor- Alicea Cock-Esteb, Advisor- Robert Reavis, Advisor- Eileen Tsai)

"If you open a water bottle and leave it out, will plastics and other bacteria from the bottle leak into the water? What if you leave the bottle in a freezer or under a heat lamp? Suppose you never open it at all?"

Tri-Valley Science and Engineering Fair, San Ramon, CA  
- 3rd Place in Category

Akshay Bhaskaran, Investigator from Team Anderson (Mentor- Leigha Winters, Advisor- Melissa Brown)

"Can you guess a persons age by seeing the elasticity of their skin?"  
Tri-Valley Science and Engineering Fair, San Ramon, CA  
- Honorable Mention Award in Category

Martin Bobb, Investigator from Team Brattain (Mentor- Duy Dao, Advisor- Robert Hill)

"How does gluten content affect yeast growth?"

7-County District Science Fair, Delaware, OH  
- Superior Grade (highest grade given)  
Ohio State Science Fair, Columbus, OH  
- Superior Grade (highest grade given)  
- 3rd place, American Chemical Society Chemical Sciences Award  
- Discovery Young Scientist Challenge Award

Sam Bobb, Mentor from Team Angstrom-b

"Wireless Power Transfer by Electromagnetic Induction"

7-County District Science Fair, Delaware, OH  
- Won 7 individual awards  
Intel International Science and Engineering Fair (ISEF), Phoenix, AZ  
- Participant

Melanie Bowman, Investigator from Team Bartram (Mentor- Phylissa Li, Mentor- Jillian Varonin, Advisor- Pamela Moy)

"Does resveratrol affect the reproduction of yeast?"

Tri-Valley Science and Engineering Fair, San Ramon, CA  
- 2nd Place in Category

Aleksandra Bril, Investigator from Team Friedman (Mentor- Natalie Cheung, Advisor- Zachary Pincus)

"Do boys prefer blue, and girls prefer pink?"

Lawton Alternative School Science Fair, San Francisco, CA  
- 1st Place (8th Grade)

Jette Cantiller, Investigator from Team d'Arsonval (Mentor- Taylor Fong, Mentor- Phong Huynh, Advisor- Henry Leong)  
"Does algae become resistant to household herbicides?"  
Carquinez Middle School Science Fair, Crockett, CA  
- 1st Place in Category (7th Grade)

Harsh Chawla, Investigator from Team Beebe (Mentor- Warren Tai, Advisor- Mohan Rao)  
"What impact do oil spills have on the oxygen output of plants in an ecosystem?"  
Tri-Valley Science and Engineering Fair, San Ramon, CA  
- Honorable Mention Award in Category

Brian Hirst, Investigator from Team Darwin (Mentor- Aleo Mok, Mentor- Jason Sun, Advisor- Pramod Walse)  
"How does wire affect how much weight a plaster pillar can support under stress?"  
Carquinez Middle School Science Fair, Crockett, CA  
- Grand Prize (7th Grade)  
West Contra Costa County Science Fair, San Pablo, CA  
- 2nd Place in Category

Lauren Ho, Christine Lee, Shirley Liao, Investigators from Team Bethel 2 (Mentor- Rachel Davidowitz, Advisor- Genetha Gray)  
"How does estrogen found in watersheds affect the gametes of male zebra fish and the reproduction and growth of the offspring?"  
Tri-Valley Science and Engineering Fair, San Ramon, CA  
- 2nd Place in Category and Special Award

Robert Homan, Investigator from Team Cockcroft (Mentor- Ben Andrews, Advisor- Bill Clancey)  
"Do we assign personal characteristics to a person based solely on his or her name?"  
7-County District Science Fair, Delaware, OH  
- Best 7th Grade Project Trophy  
- Superior Grade (highest grade given)  
Ohio State Science Fair, Columbus, OH  
- Superior Grade (highest grade given)  
- 1st Place, National Association of Biology Teachers Award

Morgan Hunt, Investigator from Team Davisson (Mentor- Anna Rankov, Advisor- Melissa Woodrow)  
"Does gender effect blood sugar levels?"  
Carquinez Middle School Science Fair, Crockett, CA  
- 1st Place in Category (8th Grade)

Pierce Hunter, Investigator from Team Angstrom-b (Mentor- Nathan Gray, Advisor- Jeff Klingner)  
"What are the effects of growing plants with different types of household sprays?"  
Tri-Valley Science and Engineering Fair, San Ramon, CA  
- Honorable Mention Award in Category

Geoff Ganzberger, Allison Wingard, Investigator from Team Barkla (Mentor- Joan Khuu, Advisor- Jane Cross, Advisor- Nicolas Peyret)  
"Do rodents use the sense of smell or the sense of sight more often?"  
Tri-Valley Science and Engineering Fair, San Ramon, CA  
- Honorable Mention Award in Category

Olivia Giang, Investigator from Team Dalton (Mentor- Alexandra Daly, Advisor- Ranka Milojkovic)  
"Can color affect a parakeets eating decision?"  
Carquinez Middle School Science Fair, Crockett, CA  
- 1st Place in Category (7th Grade) & Special Award from Bio-Rad for Best Biological Project of Show

Michael Gibbons, David Nicholas, Investigators from Team Andrews (Advisor- Armando Bottelli, Advisor- Alison Davis)  
"Do frogs have color preference while hunting?"  
Tri-Valley Science and Engineering Fair, San Ramon, CA  
- 3rd Place in Category and Special Award

Aaron Go, Investigator from Team Angstrom (Mentor- Matthew Schlossberger, Advisor- Jim Lewandowski)  
"How do different types of insulating materials affect heat retention in doghouses?"  
Tri-Valley Science and Engineering Fair, San Ramon, CA  
- 3rd Place in Category

Justin Goodman, Scott Strenger, Ian Weissman, Investigators from Team Fitch (Mentor- Chih-Tao Tu, Advisor- Balaji Rajagopalan)  
"How can we keep Canadian Geese off the fields of our school by using silhouette dogs?"  
Molloy College Biological Science Fair, Rockville Centre, NY  
- 2nd Place in Category

Nathan Gray, Mentor from Team Angstrom-b  
"Effects of Lithium Chloride on Sea Urchin Embryos"  
Tri-Valley Science and Engineering Fair, San Ramon, CA  
- 1st Place in Category

Jeffrey Joh, Investigator from Team Binnig (Mentor- Tarang Srivastava, Advisor- Bradley Shanrock-Solberg)  
"Do hearing people have biases against deaf people?"  
Tri-Valley Science and Engineering Fair, San Ramon, CA  
- 1st Place in Category

Porter Kalbus, Investigator from Team Appleton (Mentor- Jerry Guo, Advisor- Vern Vanderbilt)  
"Effects of storm run on the hatching and population of brine shrimp?"  
Tri-Valley Science and Engineering Fair, San Ramon, CA  
- 3rd Place in Category

Kevin Kennedy, Investigator from Team Doggson (Mentor- Andrew Chan, Advisor- Jacob Goldstein)  
"Can a cartogram be generated so that it accurately represents a non-traditional feature and is the least distorted from a geo-political map?"  
Langley High School Science Fair, McLean, VA  
- 2nd Place in Category  
Fairfax County Regional Science and Engineering Fair, Fairfax, VA  
- 2nd Place in Category

Jibran Khan, Prabhava Upadrashta, Investigators from Team Blackett (Mentor- George Chen, Mentor- Jennifer Sham, Advisor- Julia Badger, Advisor- Michael DiDonato)  
"Can adding antibiotics to cow feed increase the e. coli's resistance to antibiotics?"  
Tri-Valley Science and Engineering Fair, San Ramon, CA  
- 2nd Place in Category and Special Award

Kathleen Kimball, Tuhin Roy, Investigators from Team Bloch (Mentor- Janet Shih, Tiffany Thebeau, Advisor- Meredith Hodgkinson)  
"Do team skills increase with age?"  
Tri-Valley Science and Engineering Fair, San Ramon, CA  
- 3rd Place in Category and Special Award

Jake Kinstler, Lenny Luckman, Investigators from Team Frank (Mentor- Coco Rudy, Advisor- Brooke Miller)  
"How does sleep deprivation affect cognitive performance?"  
Long Island Science and Engineering Fair (LISEF), Plainview, NY  
- 3rd Place in Category with Honors

Ryan Krotowski, Investigator from Team Archimedes (Advisor- Ellen Ackerman, Advisor- James Soh)  
"How fast do genetic mutations spread?"  
Tri-Valley Science and Engineering Fair, San Ramon, CA  
- 1st Place in Category

Aaron Kwong, Jeffrey Xu, Investigators from Team Arrhenius (Mentor- Roshni Patel, Advisor- Christopher Barreras, Advisor- Chandrasekhar Varanasi)  
"How is drag affected from differing wing shapes of birds?"  
Tri-Valley Science and Engineering Fair, San Ramon, CA  
- 2nd Place in Category and Special Award

Patrick Leung, Tim Yoon, Investigators from Teams Bragg and Boyle (Mentor- Calvin Ting, Mentor- Naomi Sparks, Mentor- James Tong, Advisor- Arush Saxena, Advisor- Jeremy Kowalczyk)  
"Does the surface tension affect the index of refraction in water?"  
Tri-Valley Science and Engineering Fair, San Ramon, CA  
- 2nd Place in Category

Eileen Li, Investigator from Team Galois (Mentor- Jessica Lin, Advisor- Elizabeth Jeffords)  
"Which brand of toothpaste destroys the most plaque and germs? The more expensive brand or the cheaper one?"  
Lawton Alternative School Science Fair, San Francisco, CA  
- 3rd Place (7th Grade)

Richard Li, John Mei, Investigators from Team Bloch 2 (Mentor- Clive Leung, Advisor- Erin Cline)  
"Are Contra Costa County marinas polluted, and if so, how severe is the pollution and what substances and factors are causing the pollution?"  
Tri-Valley Science and Engineering Fair, San Ramon, CA  
- 2nd Place in Category and Special Award

Victor Lu, Investigator from Team Bloembergen (Mentor- Raymond Wang, Mentor- David Whitney, Advisor- Taed Wynnell)  
"Is the growth of plants affected by the radiation output of computer VDTs?"  
Tri-Valley Science and Engineering Fair, San Ramon, CA  
- 2nd Place in Category

Shelbi Luchini, Investigator from Team De Gennes (Mentor- Michelle Chiu, Advisor- Cathryn Mullen)  
"Can a layer of film on the surface of the water prevent or reduce normal evaporation?"  
Carquinez Middle School Science Fair, Crockett, CA  
- 1st Place in Category (8th Grade)  
West Contra Costa County Science Fair, San Pablo, CA  
- 1st Place in Category

Charley Ma, Mike Zylberman, Investigators from Team Aston (Mentor- Mani Yahyavi, Advisor- Ray Trent)  
"How much e-coli and total coliforms is in our local school supply?"  
Tri-Valley Science and Engineering Fair, San Ramon, CA  
- 2nd Place in Category

Benjamin Martinez, Investigator from Team Debye (Mentor- Rory Fifield, Advisor- Edouard Leneus)  
"Can a magnetic field affect the speed of an alpha particle in a supersaturated environment?"  
Carquinez Middle School Science Fair, Crockett, CA  
- Grand Prize (8th Grade)  
West Contra Costa County Science Fair, San Pablo, CA  
- 2nd Place in Category  
San Francisco Bay Area Science Fair (SFBASF), San Francisco, CA  
- 3rd Place in Category

Matthew McCormack, Investigator from Team Becquerel (Mentor- Kimly Huynh, Advisor- Devra Lewis)  
"How will citric acid affect the fermentation of water, sugar and yeast?"  
Tri-Valley Science and Engineering Fair, San Ramon, CA  
- Honorable Mention Award in Category

Melissa McCormack, Angela Meng, Investigators from Team Avogadro (Mentor- Mona Vaklifathi, Advisor- Denise Kenski)  
"When various common soil samples are cultivated and then grown in Campbell's beef broth, will the beef broth enhance the possibilities of soil bacteria developing antibiotics?"  
Tri-Valley Science and Engineering Fair, San Ramon, CA  
- 3rd Place in Category

Kirstin Miller, Investigator from Team Banks (Advisor- Ivo Gough Eschrich)  
"What is the effect of items such as soapy water, liquid car wax, and motor oil on the growth of plants?"  
Tri-Valley Science and Engineering Fair, San Ramon, CA  
- 3rd Place in Category

George Moore, Investigator from Team Bardeen (Mentor- Jesse Lampert, Advisor- Albert Ryan)  
"What are the effects of increased amounts of algae on oxygen level in water?"  
Tri-Valley Science and Engineering Fair, San Ramon, CA  
- Honorable Mention Award in Category

Kevin Paul, Investigator from Team Bednorz (Mentor- Kevin Kwan, Mentor- Pao Xiong, Advisor- Kevin Hwang)  
"In the Salton Sea Area, there have been earthquakes with several P waves before there was an S wave. What is causing these multiple P waves?"  
Tri-Valley Science and Engineering Fair, San Ramon, CA  
- 2nd Place in Category and Special Award

Sanjit Rai, Investigator from Team Dehmelt (Mentor- Sarah Katz, Advisor- Donna Hardy)  
"What is the effect of water flowing into Rodeo Creek on Elodea growth?"  
Carquinez Middle School Science Fair, Crockett, CA  
- 1st Place in Category (8th Grade)

Jenay Ross, Investigator from Team Desargues (Mentor- Cindy Guan, Mentor- Mollie McKillop, Advisor- Babette Fahey)  
"Can a person's appearance affect people's attitude toward them?"  
Carquinez Middle School Science Fair, Crockett, CA  
- 2nd Place in Category (7th Grade)

Abby Steele, Investigator from Team Cronin (Mentor- Victoria Chu, Mentor- Negar Pirooz, Advisor- Bruce Weaver)  
"How do different types of fabrics shrink in the dryer?"  
7-County District Science Fair, Delaware, OH  
- Superior Grade (highest grade given)  
Ohio State Science Fair, Columbus, OH  
- Superior Grade (highest grade given)

David Stern, Investigator from Team Fresnel (Mentor- Amanda Berry, Advisor- Steven Rodrigues)  
"How do the antibacterial effects of honey change as the type of honey that is applied to household bacteria is modified?"  
Molloy College Biological Science Fair, Rockville Centre, NY  
- Finished with Honors

Stephen Wang, Investigator from Team Bowditch (Mentor- Annie Leifur, Advisor- Harvey Lynch)  
"Can wasabi kill bacteria on raw sushi?"  
Tri-Valley Science and Engineering Fair, San Ramon, CA  
- 1st Place in Category

Patrick Wong, Investigator from Team Dewar (Mentor- Jackson Myers, Advisor- Bennett Berke)  
"Does the size of letters in words effect how fast someone can read it?"  
Carquinez Middle School Science Fair, Crockett, CA  
- 3rd Place in Category (8th Grade)

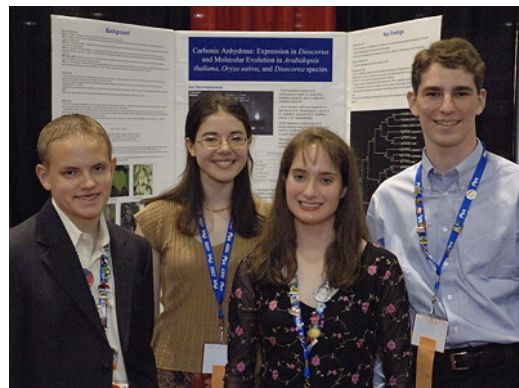
Nico Woods, Investigator from Team Fahrenheit (Mentor- Thomas Nguyen, Advisor- Ari Vogel)  
"How can I use ion wind as a force where no moving parts are allowed?"  
Langley High School Science Fair, McLean, VA  
- 3rd Place in Category

Will Wright, Investigator from Team d'Alembert (Mentor- Jemma Dougherty, Mentor- Robert Huang, Advisor- Tara Andrews)  
"What factors effect the digestion of starch? Such as PH, concentration of an enzyme?"  
7-County District Science Fair, Delaware, OH  
- Superior Grade (highest grade given)  
Ohio State Science Fair, Columbus, OH  
- Superior Grade (highest grade given)

Cati Wuest, Investigator from Team Barrow (Mentor- Jenny Hsu, Mentor- Cindy Lin, Advisor- Analeah Heidt)  
"Effect of plant extracts on bacteria."  
Tri-Valley Science and Engineering Fair, San Ramon, CA  
- 2nd Place in Category

## State and National Science Competition Participants & Winners

Six Science Buddies Mentors competed in Phoenix, Arizona, at the Intel International Science & Engineering Fair (ISEF). Four of them won a prestigious "Grand Award" given to only one in four participants at this event often called the "Olympics of Science Fair Competitions." Students qualify for ISEF by winning their regional or state science fair, so participation in ISEF is an honor in itself. During a special event of Intel ISEF 2005, a international panel of scientists and technologists, including nine Nobel Laureates, shared career highlights and advice with a packed audience of high school finalists. Science Buddies Mentor Amber Hess was also one of 40 Finalists from across the nation in the Intel Science Talent Search, which is America's oldest and most prestigious pre-college science competition and often considered the "junior Nobel Prize." As a Finalist, Amber won a \$5,000 scholarship, a high-performance laptop, and an all expense paid trip to Washington, DC. (Pictured at right: award-winning Science Buddies Mentors at the 2005 Intel ISEF. From left: Terik Daly, Marissa Goldblatt, Amber Hess, and Benjamin Pollack.)



Amanda Berry, Mentor from Team Fresnel  
"Are Stock Options Congruent with Maximizing Share Holder Value? A Mathematical Derivation"  
Intel Science Talent Search (STS)  
- Semifinalist, \$1,000 award and \$1,000 matching grant for school  
Siemens Westinghouse Competition in Math, Science & Technology  
- Semifinalist

Sam Bobb, Mentor from Team Cooper  
"Wireless Power Transfer by Electromagnetic Induction"  
Intel International Science & Engineering Fair (ISEF)  
- All-expense-paid trip to Phoenix, AZ

Lecia Brown, Mentor from Team Born  
"Studies on the Production of RANTES by U937 Cells"  
Intel International Science & Engineering Fair (ISEF)  
- All-expense-paid trip to Phoenix, AZ

Terik Daly, Mentor from Team Condon  
"The Derivation and Interpretation of Geochemical Ratios Generated by Meteoritic Impact"  
Intel International Science & Engineering Fair (ISEF)  
- All-expense-paid trip to Phoenix, AZ  
- 4th Place, \$500 Grand Award in Earth Science  
- Office of Naval Research on behalf of the U.S. Navy and Marine Corps: Tuition Scholarship Award in the amount of \$8,000  
California State Science Fair, Los Angeles, CA  
- Dr. & Mrs. Arnold O. Beckman Project of the Year and \$10,000 Award  
- 1st Place in Senior Division Earth Sciences/ Planetary Sciences/ Physical Environments and \$500 Award

Rachel Davidowitz, Mentor from Team Bethe 2  
"The Role of LMP2A and EBNA-1 on the Morphogenesis and Oncogenesis of MCF10A Breast Epithelial Cells"  
Intel Science Talent Search (STS)  
- Participant  
Siemens Westinghouse Competition in Math, Science & Technology  
- Participant

Marissa Goldblatt, Mentor from Team Alvarez  
"Using Wing Characteristics of Drosophila to Map Evolutionary Modes and Patterns"  
Intel International Science & Engineering Fair (ISEF)  
- All-expense-paid trip to Phoenix, AZ  
- 4th Place, \$500 Grand Award in Team Competition

Marissa Goldblatt, continued  
Intel Science Talent Search (STS)  
- Semifinalist, \$1,000 award and \$1,000 matching grant for school  
Siemens Westinghouse Competition in Math, Science & Technology  
- Participant

Jerry Guo, Mentor from Team Appleton  
"Regulation of Late-Stage Flower Development by Downstream Genes of the Homeotic Protein AGAMOUS"  
Siemens Westinghouse Competition in Math, Science & Technology  
- Semifinalist

Amber Hess, Mentor from Team Fowler (Advisor-Kimberley Cousins)  
"Digitally-Enhanced Thin-Layer Chromatography: An Inexpensive, New Technique for Qualitative and Quantitative Analysis"  
Monterey County Science and Engineering Fair, Seaside, CA  
- 1st Place Senior Division Chemistry  
California State Science Fair, Los Angeles, CA  
- 1st Place in Senior Division Chemistry and \$500 Award  
Intel International Science & Engineering Fair (ISEF)  
- All-expense-paid trip to Phoenix, AZ  
- 1st Place Grand Award in Senior Division Chemistry and \$3,000 Award  
- Agilent Technologies, paid summer internship at an Agilent Technologies site  
- American Association for Clinical Chemistry, Honorable Mention Award of \$50  
- DuPont, Honorable Mention Award of \$500  
Intel Science Talent Search (STS)  
- All-expense-paid trip to Washington D.C.  
- 1 of 40 Finalists from across the U.S.  
- \$5,000 Award and a high performance laptop  
Siemens Westinghouse Competition in Math, Science & Technology  
- Semifinalist

Benjamin Pollack, Mentor from Team Guesde  
"Carbonic anhydrase: Expression in Dioscorea and Molecular Evolution in Arabidopsis thaliana, Oryza sativa, and Dioscorea species"  
Intel International Science & Engineering Fair (ISEF)  
- All-expense-paid trip to Phoenix, AZ  
- 3rd Place, \$1,000 Grand Award in Team Competition  
Siemens Westinghouse Competition in Math, Science & Technology  
- Semifinalist

Matthew Schlossberger, Mentor from Team Angstrom  
"Electrospinning of Polystyrene and POSS Nanofibers"  
Intel Science Talent Search (STS)  
- Semifinalist

## Calendar Year 2004 Financial Summary

Science Buddies is a very lean organization. The president, Ken Hess, takes no salary, and all other employees operated from home offices or donated office space during calendar year 2004, keeping overhead expenses at an absolute minimum.

**Figure 11. Calendar Year Expenses**

<b>Operating Expense Category</b>	<b>2003 Expenses</b>	<b>2004 Expenses</b>	<b>Comments</b>
Employee wages, taxes, & benefits	\$197,656	\$196,908	
Other professional fees	\$ 2,372	\$ 1,180	Legal, accounting, graphic design, administrative
Internet services	Included in office expenses	\$ 34,524	Internet server, connections, advertising
Miscellaneous office expenses	\$ 8,053	\$ 6,484	
Volunteer screening fees	\$ 3,242	\$ 1,277	
Participant awards	\$ 3,150	\$ 4,900	
Other miscellaneous expenses	\$ 775	\$ 1,666	
<b>Total</b>	<b>\$215,248</b>	<b>\$246,939</b>	

## Fundraising Summary

During the 2004-2005 program year, Science Buddies continued to enjoy generous support from dozens of corporate sponsors whose donations funded the majority of our operating budget. As in prior years, earning corporate support was the primary focus of our fundraising strategy. Over the years, we have built strong relationships with several of our ongoing sponsors such as AMD, Bio-Rad Laboratories, and Affymetrix, who contribute not only financially but have also been excellent sources of volunteers. In the last 12 months, the steady and rapid growth in the audience of students we serve nationally has helped us attract large, new funders as well. We are proud to have recently been awarded significant grants from the American Honda Foundation and the Motorola Foundation. Please see our website for a complete sponsor list.

Our efforts to develop partnerships with academic and research organizations working under government grants continue. Our partnership with the Molecular Sciences Institute in Berkeley, California, was extended for an additional year and we are in the early stages of establishing similar collaborations with researchers at Princeton, UC Santa Cruz, and Stanford. As in prior years, we also conducted a few campaigns directed at individual donors (friends, early supporters, and volunteers of the organization). We have a small but growing donor base and we plan to continue cultivating this source of support in the coming years. We did not feel that we had the resources and time to devote to applying for governmental grants during the 2004-2005 program year.

## Conclusions & Implications for Next Year

### Program Focus

Since its founding four years ago, Science Buddies' focus has been on its Online Mentoring Program. But at the end of last season, we decided to de-emphasize the Online Mentoring Program, by reducing the number of students we accepted into the program, in order to be able to focus more resources on developing our newer programs, Topic Selection Wizard and Ask an Expert. This proved to be a wise decision. We made great strides with both of these programs this year. We were able to demonstrate that we can serve a much larger and a more diverse audience of students, at a lower per student cost and with similar benefits to students, with the Topic Selection Wizard and Ask an Expert programs than we can with the Online Mentoring Program.

Going forward, we have therefore decided to shift all of our organizational resources toward the Ask an Expert program and the Topic Selection Wizard. During this time, we have decided not to conduct the Online Mentoring Program, but we may revise and re-open it at some point in the future.

## Online Mentoring Program Participating Schools & Employers

### *Investigator Schools*

Participating Schools	County or [State]	Participants
Bohannon Middle School	Alameda	8
Carquinez Middle School	Contra Costa	12
Columbia Middle School	Santa Clara	11
Dempsey Middle School (OH)	[Ohio]	23
Langley High School (VA)	[Virginia]	8
Lawton Alternative School	San Francisco	7
Monte Vista High School	Contra Costa	17
Plainview Old Bethpage JFK High School (NY)	[New York]	21
San Ramon Valley High School	Contra Costa	27
<b>Totals by County or [State]</b>		
	Alameda	8
	Contra Costa	56
	[Ohio]	23
	San Francisco	7
	Santa Clara	11
	[New York]	21
	[Virginia]	8
<b>Total from Underserved Communities</b>		
Students from schools with greater than or equal to 25% of students qualifying for free lunch program (we collect no such information from individual students)		38
<b>Total Investigators</b>		<b>134</b>



Mentor Mindy Tang (left) takes a break at the Synopsys Championship to pose for a shot with her partner. Both considered their project "Snails Be Gone" to be "fun and interesting with a very smelly twist."

## Mentor Schools

Participating Schools	County or [State]	Participants
Acalanes High School	Contra Costa	1
ACCEL Middle College	Santa Clara	1
Athenian School	Contra Costa	3
Bellarmino College Prep	Santa Clara	2
Burlingame High School	San Mateo	2
California Academy of Mathematics and Science	Los Angeles	3
California High School	Contra Costa	8
Carondelet High School	Contra Costa	3
Castro Valley High School	Alameda	1
College Preparatory School	Alameda	1
De La Salle High School	Contra Costa	2
El Cerrito Senior High School	Alameda	8
Fairfield High School	Solano	1
Foothill High School	Alameda	2
Hillsdale High School	San Mateo	1
Las Lomas High School	Contra Costa	1
Mills High School	San Mateo	3
Mission San Jose High School (Fremont)	Alameda	8
Monta Vista High School (Cupertino)	Santa Clara	6
Monte Vista High School (Danville)	Contra Costa	10
Mountain View High School	Santa Clara	1

Participating Schools	County or [State]	Participants
Northgate High School	Contra Costa	2
Notre Dame High School	Santa Clara	1
Oak Grove High School	Santa Clara	1
Piedmont High School	Alameda	5
Piedmont Hills High School	Santa Clara	1
Plainview Old Bethpage JFK High School	[New York]	9
Redwood High School	Marin	4
Riverside High School (Greer SC)	[South Carolina]	1
Rutherford B. Hayes High School	[Ohio]	14
San Ramon Valley High School	Contra Costa	1
Santa Teresa High School	Santa Clara	2
Saratoga High School	Santa Clara	1
Sherwood High School	[Oregon]	1
Silver Creek High School	Santa Clara	3
Somerville High School	[New Jersey]	1
Southwest High School	[North Carolina]	1
Stevenson School	Monterey	4
Suncoast Community High School	[Florida]	1
University High School	Orange	1
Valley Christian Schools	Santa Clara	2
Woodside Priory School	San Mateo	1

High School Totals by County or [State]	
Alameda	25
Contra Costa	31
Los Angeles	3
Marin	4
Monterey	4
Orange	1
San Mateo	7
Santa Clara	21
Solano	1
[Florida]	1
[New Jersey]	1
[New York]	9
[North Carolina]	1
[Ohio]	14
[Oregon]	1
[South Carolina]	1
<b>Total Mentors</b>	<b>125</b>



## Advisor Employers

Advisor Organization	Participants
Actuate	1
Affymetrix	1
AMD	6
AOL	1
Applied Biosystems	2
Atmel Corp.	1
Bio-Rad Laboratories	14
Boston Scientific	2
Brown and Caldwell	1
California Institute of Technology	1
Chicago Academy High School	1
Clairvoyante Laboratories	1
CVRWQCB - State of California	1
ELORET Corp./NASA Ames	1
Genentech	2
Genworth Financial Long Term Care Division	1
GNF	1
Green Environment, Inc.	1
Heidelberg College	1
Hewlett-Packard Company	1
IBM	1
Integrated Science Solutions, Inc	1
Intel	2
Lam Research	1
Lawrence Berkeley National Lab	1
Liebert	1
Lockheed Martin	3
MIRA	1
Monterey Bay Aquarium	1
Morgan State University	1
NASA Ames Research Center	2
National Institutes of Health	1
National Semiconductor	1
Network Appliance	1

Advisor Organization	Participants
Ohio State University at Marion	1
Other	3
Rembold Companies	1
RFCO	1
Roches Diagnostics	1
Sandia National Labs	1
SBC	1
Seagate Technology	1
SETI Institute (Contract with NASA)	1
SF Bay Area Rapid Transit	1
Soldan International Studies High School	1
SRI International	1
Stanford Linear Accelerator Center (SLAC)	4
Stanford University	6
Sun Microsystems	1
Synaptics Inc	1
Synopsys	3
Taj Technologies	1
The Source Group, Inc	1
UC Irvine	1
UC Santa Cruz	3
UCSF	3
University of Hawaii	1
US Geological Survey	1
USDA ARS ANRI BGL	1
USDA Forest Service	2
UT Austin	1
Ventura County Sheriff's Department	1
Vertical Networks	1
Virginia Bioinformatics Institute	1
Watsonville Community Hospital	1
Xilinx	3
<b>Total Advisors</b>	<b>110</b>

## Contact Information

### Main Office:

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P.O. Box 5038  
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[www.sciencebuddies.org](http://www.sciencebuddies.org)

Phone: 888-794-7875  
scibuddy@sciencebuddies.org

Science Buddies is the sole operating program of The Kenneth Lafferty Hess Family Charitable Foundation, a 501(c)3 non-profit organization.

EIN #: 94-3216541

### Development Office:

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