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SDSA *connections*

UNITING SAN DIEGO BUSINESSES, EDUCATORS AND STUDENTS TO IMPROVE K-12 SCIENCE, ENGINEERING AND TECHNOLOGY LITERACY

SDSA : Celebrating 10 Years of Innovation

San Diego Science Alliance

As necessity is often the mother of invention, the San Diego Science Alliance (SDSA) took root in 1994 from a yawning need. Visionaries from science- and technology-based businesses observed they had been talking with the same group of locals at industry/education partnership events for years. They knew this group yearned to unearth methods of working together to benefit both industry and education.

Upon this discovery, the visionaries began formulating hypotheses about how local business trends would affect San Diego's growing student population, how educators could best prepare students for their future role in the region's workforce, and how to improve two-way communications between local businesses and educators.

In 1995, the group was ready to test their theories. On July 25 of that year, the founding five — Patricia Winter, representing General Atomics (GA); Gwen Rosenberg of (the former) Alliance

Pharmaceuticals Corp.; Marky Pitts from the University of California, San Diego; Percy Myers from GDE Systems (which became Marconi, and later, BAE Systems); and Todd Talashek from (CP) Kelco — launched SDSA at GA. Keynoter Rudy Castruita, who would later take office as superintendent of the San Diego County Office of Education, demonstrated to a large, enthusiastic group of industry and education leaders how to blend essential local business community input with education for the benefit of all. It was at that meeting that representatives from two other local companies, Tom Dillon from Science Applications International Corporation (SAIC) and Christine Le Mond from Hughes Network Systems, immediately got on board for the mission of enhancing science education for local K-12 students.

In 10 years, the SDSA has grown from those seven members into a non-profit consortium with 32 directors, who represent 22 regional businesses and foundations, and

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SCIENCE WATCH

- 61% of scientists say they first became interested in science before age 11.
- 95 % of scientists believe elementary schools should focus their resources to ensure all students receive an education that allows them to develop their potential in science whether or not they are likely to go on to science careers; 77 percent believe the same for high schools.
- 77% of scientists believe it is very important for adults today to be science literate; ten years from now, even more scientists (86%) believe the same will be true.

Source: The Bayer Facts of Science Education

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Cubic Corporation,
Biogen Idec, Foley & Lardner,
General Atomics,
Merck Research Laboratories - San Diego
Mission Federal Credit Union,
Northrop Grumman, Qualcomm,
SAIC, Solar Turbines

CONTRIBUTING PARTNERS:

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SDSA Hands-On Science, Engineering, Tech Programs Prime Thousands of San Diego Students to Embark in Local Colleges, Universities, Workforce

Since its inception in 1995, SDSA has enhanced science, engineering and technology education for local K-12 students through programs, projects and partnerships. Unlike workforce and job development agencies, SDSA focuses solely on enhancing students' command of these fields to better prepare them for higher education and brighter futures in our local industries.

"We were concerned that students were not receiving enough hands-on, inquiry-based science in their classrooms. Without interactive learning in science and technology, students appear to be less prepared for the rigors of higher education and their future role in the region's workforce," said Duane Roth, executive director of CONNECT and chairman of Alliance Pharmaceutical Corp., one of SDSA's original founding companies.

"SDSA attracts companies like a supermagnet because it collects the vital resources and provides essential hands-on learning for students. Now businesses have many channels to work together with students to shape their future—and ours," said Barbara Abelin, vice president of Human Resources for Cubic Corp., and the SDSA's 10th anniversary co-chair and past president.

To support K-12 teachers in providing the required science education curriculum for San Diego's 500,000+ students, the SDSA engages businesses in contributing to 11 hands-on

programs such as 'BE WiSE' (Better Education for Women in Science and Engineering); the SDSA Resource Catalog, a.k.a. the "Yellow Pages of San Diego science/engineering/tech resources and programs," plus related links from the SDSA website: sdsa.org.

By helping businesses respond to students' and teachers' growing science education needs, SDSA forged strong industry bonds. The 17 SDSA board companies' dedication, as well as the increased involvement by area businesses such as Cubic Corp., General Atomics, Northrop Grumman (formerly TRW), Science Applications International Corporation (SAIC) and Solar Turbines, combined with that of research centers and information educational organizations, extends science, engineering and technological education responsibilities beyond the ability and funds of the K-12 school community.

"From a big-picture perspective, the SDSA needs far more resources from local businesses to reach a far greater proportion of San Diego's students if we're going to have a lasting positive impact on our local economy," said Roth.

For more information on contributing to our community's K-12 science, engineering and tech hands-on education through tax-free donations and other contributions of time, knowledge (human capital) and equipment for SDSA's 11 hands-on programs, please contact Patricia Winter, SDSA executive director, at pat.winter@gat.com.

STUDENT SPEAK

By Sarah Vincelett, Granite Hills High School

My years of involvement in SDSA's BE WiSE program has been filled with excitement and discovery. Beginning in the 7th grade, the volunteers and other female participants have helped me to become a more scientifically savvy individual, as well as informing me of interesting careers in scientific fields of study. To the best of my knowledge, BE WiSE is the only program where women and young girls interested in science and engineering can participate in hands-on activities with women mentors who are scientific specialists. Having a program consisting of all girls provides young women with support systems and encouragement to pursue our scientific dreams in male-dominated professions.

My most memorable experience is my first BE WiSE sleepover at the Birch Aquarium in La Jolla. I remember the anticipation of arriving

with a group of, at first, shy girls, who shared a love and thirst to learn more about science. By the next morning, we were best friends, having learned very interesting facts about oceanography, marine science, and each other. Now that I am a BE WiSE alumna, I stand on the sidelines watching new shy and curious girls blossom at the overnight programs into new scientists, informed and even more curious about science and its many wonders.

BE WiSE has nurtured me, along with many other scientifically curious girls, in our pursuit of our future career goals. It also provides a place where girls who are similar in their love of science can be together and relate with each other in a safe, scientifically interesting setting. I am proud and honored to have participated in the BE WiSE program.



SDSA's Future is in Hyper-Drive...Look out 2025!

We need to recognize that the United States is losing its dominance in the sciences and engineering in the international arena, and we must play a vital role in the next 10 years ensuring that does not happen.

The year 2025 seems like a long time from now; however that's what we thought in 1995 when SDSA began. We have seen phenomenal growth in science, engineering, and technology in the San Diego Region, both in academics and industry. Of course, there have been peaks and valleys, but as a community, we have learned from both, and we see a radiant horizon within reach.

The SDSA board envisions itself as a catalyst for growth and change. Over the next decade, we would like to see SDSA become the premiere science organization for all of San Diego County, bringing together business, higher education and the professional societies to make a significant difference for San Diego, as well as the United States.

Our signature production, the Resource Catalog, has proven invaluable to teachers in the region over the past 10 years. Recognizing its importance to these educators, in 2004, we added a section in the catalog that aligns the resources available to State Science Standards. By monitoring industry trends and soliciting feedback for improvement from our users, we will be sure to continue to improve it over the coming decade.

On a curriculum level, SDSA has two very strong programs that continue to gain strength: BE WiSE (Better Education for Women in Science and Engineering) and PISCES (Partnerships Involving the Scientific Community in Elementary Schools). We envision both significantly expanding, with PISCES leading the way as the template for science instruction in elementary schools across the county. In addition, in 2004, we started an exciting new program, SDSA Robotics, that enhances our link to engineering and engineering-oriented thinking and skill sets, which are certainly critical for the region's workforce.

SDSA is committed to improving science, engineering and technology education; however we understand that a good education alone cannot prepare students for the future. We serve both the students and teachers of San Diego County, and it is critical that we continue meet and exceed their needs. We cannot provide the high level of support that our constituents deserve without the help and support, both participatory and monetary, of the scientists, engineers and businesses in our community.

San Diego's potential for growth in science, engineering, and technology is vast. SDSA wants to be an important part of making sure that the region capitalizes on every ounce of its potential. 2025 is closer than we think.

Patricia Winter, SDSA Executive Director

To contribute to SDSA's PISCES program, please contact Nancy Taylor at ntaylor@sdcoe.k12.ca.us.

To contribute to SDSA's BE WiSE or Robotics programs, please contact Patricia Winter at pat.winter@gat.com.



"WITHOUT INTERACTIVE LEARNING IN SCIENCE AND TECHNOLOGY, STUDENTS APPEAR TO BE LESS PREPARED FOR THE RIGORS OF HIGHER EDUCATION AND THEIR FUTURE ROLE IN THE REGION'S WORKFORCE."

— Duane Roth, executive director of CONNECT and chairman of Alliance Pharmaceutical Corp., one of SDSA's original founding companies.

SMARTER SCIENCE

by Gail Kopperud,
Poway High School



Science used to be just an hour-long class when I was in 7th grade. However, over the next 5 years, science transformed itself into a mindset, a community, a friend, and a source of fun! This metamorphosis resulted from being accepted into SDSA's BE WiSE (Better Education for Women in Science and Engineering) program. The experiences and knowledge I gained from BE WiSE continues to help me plan my future and discover new opportunities.

From my first BE WiSE overnight at Sea World to my most recent look at the Wild Animal Park's veterinary hospital, I learned more than I anticipated, and now see San Diego as an amazing opportunity where a vibrant scientific community eagerly helps young girls take on the world—prepared. I feel greatly honored to be able to meet Nobel Prize winners, outstanding scientists and many caring people through BE WiSE. At college interviews they would ask what BE WiSE was and I would smile. Once I would begin to explain what I have experienced and learned through the unique program, I've never met anyone who fails to be impressed, amazed and a little jealous. Without BE WiSE, I would not be as passionate about a scientific career or as eager to someday return to be a part of the San Diego scientific community that has touched so many girls like me. I will return after attending Ripon College and obtaining a double major in biology and environmental studies, and going on to obtain my D.V.M in graduate school.



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The SDSA, a non-profit consortium of leaders from business, K-12 education, higher education and scientific institutions in San Diego County, is committed to enhancing science literacy in K-12 education by networking among organizations in the consortium, connecting needed resources with K-12 educators, and initiating, conducting and supporting K-12 science education programs for San Diego County students and teachers.



We're on the Web!
Read about us at:
www.sdsa.org

Celebrating 10 Years of Science Outreach *(cont. from p. 1)*

10 institutions of learning, ranging from K-12 schools through the local university systems.

Today, SDSA's membership is ripe with more than 2,000 companies, educators and program graduates. Over the years, with vital SDSA member support, the SDSA's 11 programs and projects have directly educated, and more importantly, excited nearly 500,000 students, spanning all of the 42 San Diego County school districts. For local businesses who have even more to offer teachers and students, the SDSA publishes the Resource Catalog so K-12 educators can easily identify hundreds of local, educational science,

engineering and technology field trips, programs and resources for individual students, classes and schools.

The SDSA continues to positively impact the area's science, engineering and technology initiatives for businesses, educators and students. However, as the business landscape evolves and as the student population rises, so does the necessity for more innovative ways of improving science, engineering and technology education. Sign up today for the SDSA e-newsletter at www.sdsa.org to learn more about how we can work together accomplish more for San Diego schools and businesses.

Explore Involvement in SDSA and Make a Difference

The dynamic SDSA always seeks individuals and groups who are passionate about advancing science, engineering and technology education in San Diego, and who feel compelled to help advance our region's workforce. Moreover, companies find the SDSA fits perfectly with their corporate and community relations strategies.

The SDSA is for you, your organization or school if you answer "yes" to any of these:

- Are you an educator or businessperson in the fields of science, engineering or technology?

- Are you affiliated with an organization that is interested in advancing education initiatives and developing the region's workforce in these three fields?
- Do you want to make a difference by being an active participant or through donations of money, facilities or equipment?

We encourage you and your company or school to explore involvement at any level to help make a difference for San Diego. Visit sdsa.org, and contact Patricia Winter, SDSA executive director, at pat.winter@gat.com.

