

2006 AWARD WINNER: DISTRICT LEADERSHIP OF THE YEAR IN SCIENCE, MATH AND TECHNOLOGY

Dr. Cameron M. McCune

Superintendent, Fullerton School District

What is your vision of "innovation in education"?

Dr. McCune's vision is to "engage students in learning via the vehicle they know best, digital media." Through the district's magnet science/technology school, as well as the one-to-one computer and Arts LAB programs, students learn state content standards while developing their media literacy, critical thinking, problem-solving and communication skills.

How has your vision been communicated to stakeholders?

Stakeholders learn about and implement the vision through monthly management meetings; book talks, such as those on Good to Great, Professional Learning Communities at Work and The World is Flat; budget and oversight committees; and community-wide strategic planning.

Innovative Programs

Arts LAB buses roll daily to classrooms across the District's seventeen elementary schools, providing students with digital movie-making presentation skills aligned to the State Content Standards.

Beckman@Science, sponsored by the Arnold and Mabel Beckman Foundation, provides students the opportunity to experience first-hand the wonders of science through an inquiry-centered science curriculum.

The Adventures in Science program, a local partnership between Beckman Coulter, Raytheon, and the Southern California College

of Optometry, provides opportunities for students to work on location with scientists and other professionals in the field.

Fisler School, K-8 Science/Technology Magnet, reflects the 21st century workplace and is designed to maximize the use of technology. Students and teachers regularly use a wide variety of digital media tools to "channel their creativity and imagination."

One-to-one laptop program provides over 2,000 students in four schools computer access 24-hours a day, seven days a week. Laptops are utilized for daily instruction and homework.

Student Results

Under Cameron's leadership, Academic Performance Index (API) scores have increased 46 points and 50% of Fullerton's schools are now scoring at or above 800 on the API Scale. Over 60% of the district's schools have received state and national recognition.

Education's role in driving Orange County's economic competitiveness

"To unite with the business and industrial community in order to create a shared vision of the needs of our learners who will one day become the necessary world-class leaders, second to none."

Innovation – any new idea – by definition will not be accepted at first. It takes repeated attempts, endless demonstrations, and monotonous rehearsals before innovation can be accepted and internalized by an organization. This requires "courageous patience."

Warren Bennis

2006 AWARD WINNER: INNOVATIVE SCHOOL PROGRAM OF THE YEAR IN SCIENCE, MATH AND TECHNOLOGY

Innovative Technology Programs

Dan Sullivan

Principal, Trabuco Hills High School
Saddleback Valley Unified School District

What is your vision of "innovation in education"?

Mr. Sullivan's vision of innovation in education "is the relentless pursuit of a better way for students to learn."

How has your vision been communicated to stakeholders?

Each year the school's strategic action plans are revised by the entire staff and student, parent and community advisory committees. The goals, action plans and successes are communicated to all stakeholders through email, the website, newsletters, and bulletins. Additionally successful innovations are showcased at county and state conferences.

Program Description: Innovative Technology

In 2003, Trabuco Hills High School was one of four schools recognized as a Distinguished School in Career Technical Education. Over 600 students participate in industry-standard career exploration courses each semester.

Digital High School Laptop program. During this year-long Cultural Geography/History curriculum, ninth grade students learn core computer skills in Microsoft Office Suite (MS Word, PowerPoint, and Excel) that are required during their high school career. For example, students complete research projects and brochures for international tourism using Microsoft Word. Students also develop spreadsheets, charts, and tables comparing the economics, population, and climate of various countries using Excel. This approach provides a common technology foundation for all subsequent high school course work across the curriculum.

ACME Animation. In fall 2006, two new animation courses will be added to the class schedule. Through these classes, students will learn animation skills using video conferencing to work directly with studio animators who will instruct, mentor, and critique student work from miles away.

Intervention programs. Read 180, a computer-based, highly interactive remedial reading program, is being used to help English Language Learners develop critical literacy skills. Skills Tutor.com and other appropriate software are being used to help students improve their Math and English Language Arts skills in preparation for the California High School Exit Exam.

Video Conferencing. Lessons are regularly conducted using video conferencing, including: virtual field trips to museums, discussions with astronauts and NASA engineers, guest lecturers, interviews with authors, and conversations between students in other classrooms, high schools and countries.

Program Results

Innovation success breeds greater innovation! Over 30 new courses have been developed in the last five years. As a result of the technological integration, teachers understand the needs of the "Millennial" student; they are comfortable experimenting, integrating, and seeking funding for the latest technology. Teachers and administrators are seeking new ways to improve school operations through the use of Personal Data Assistants, high-speed telephone and emergency notification systems, and software for the scheduling, tracking and notification related to a variety of student activities.

Education's role in driving Orange County's economic competitiveness

"It is the responsibility of the schools to prepare our students for entry into this global market. It is the job of education to prepare this versatile workforce with high-level skills, a broad range of knowledge, and with technology skills that are truly "industry standard." Only then will our Millennial students be ready to launch into the uncharted frontiers of future technologies and job skills we can hardly imagine."

Implementing best practice
is replicating yesterday;
innovation is designing
tomorrow.

Paul Sloane

2006 HONORABLE MENTION: INNOVATIVE SCHOOL PROGRAM OF THE YEAR IN SCIENCE, MATH AND TECHNOLOGY

Global Information Technology Academy

Jerry Halpin

Principal, Brea Olinda High School
Brea Olinda School District

What is your vision of "innovation in education"?

Mr. Halpin's vision is to prepare students to compete in a globally competitive technological workplace. Students in the Global Information Technology Academy are learning the necessary skills to compete in a multi-cultural, global business environment, including: critical thinking, problem-solving, information-literacy, communication, interpersonal and self-direction.

How has your vision been communicated to stakeholders?

The vision for the Global IT Academy is communicated to business leaders and parents through Academy Information Nights and local business events.

Program Description: Global Information Technology Academy

The Global Information Technology Academy, an international partnership between Brea Olinda High School and the Dongguan Science and Technology Bureau in Dongguan, China, fosters an environment that empowers and challenges students to solve real world global technology issues.

The Academy is a rigorous four-year program that provides students with opportunities to gain college-level instruction and credit for global information technology courses in their area(s) of specialization; international research and collaboration experience; marketable IT certifications; and international corporate work experience.

Global knowledge transfer, collaboration and communication are key objectives of the Global IT Academy. Student project teams are responsible for managing the technology and encouraged to continually evaluate and leverage new technologies to improve international collaboration and communication.

Program Results

The Global IT Academy was launched in fall 2005 with twenty-six ninth-graders taking computer science courses. It is anticipated that the four-year program will quadruple the number of students who can participate in computer science courses at Brea Olinda High School.

Education's role in driving Orange County's economic competitiveness

"The education community needs to continue its push to prepare more students who have the technological expertise to compete in a global economy. Educators can accomplish this by strengthening ties with the business community and by creating stronger articulation programs with local colleges and universities."

2006 AWARD WINNER: HIGH IMPACT TEACHER OF THE YEAR IN SCIENCE, MATH AND TECHNOLOGY

Kathryn F. Fliegler

Science Teacher, Trabuco Hills High School
Saddleback Valley Unified School District

What is your vision of "innovation in education"?

Mrs. Fliegler's vision is to develop inquisitive, life-long learners who are passionate about science.

Innovative Programs

Katie creates learning communities with a specific career focus so that students can see how the science they are studying in the classroom can be used in their future.

Through the Trabuco Hills' **Medical Science Institute**, students learn about careers in the medical and health fields. Central to this academy is an innovative science curriculum that integrates Math, English, and Social Studies. Students learn about the connection between their coursework and careers through coordinated projects, presentations and career exploration in the medical and health fields. Med-Sci students are required to complete a semester long internship in a health/medical career and 20 hours of community service.

Imagination is more important than knowledge – for while knowledge points to all that is, imagination points to all there will be.

Albert Einstein

Through the Trabuco Hills' **Docent Science Program**, high school students develop and teach hands-on standards-based science lessons to elementary school students. The docents spend their class time reading and researching content and lab activities that support the California Science Standards for a specific grade level. Using this research and their understanding of science, the docents create lessons in areas of life, physical and earth science.

Not only do the lessons that the docents design give the elementary students a hands-on science experience, they model science strategies and skills for K-6 teachers.

Program Results

Students in Med-Sci programs are expected to maintain high scholastic standing; the average GPA of the Med-Sci graduates is 3.5 (based on a 4.0 scale).

In the docent program, 97% of the seniors are continuing on to a college or university. Students also report the docent program helps them develop leadership skills, gain a better understanding of science concepts, and over 50% are interested in pursuing a career in education. Students also learn the value of contributing to their community through Family Science Nights held at local elementary schools and countywide Community Science Events hosted at the Discovery Science Center and the Ocean Institute.

Education's role in driving Orange County's economic competitiveness

"As an educator I need to demonstrate how life-long learning enables us to compete in our new global economy and I must be aware of what science and technology I need to make my classes relevant for my students."

2006 AWARD WINNER: HIGH IMPACT TEACHER OF THE YEAR IN SCIENCE, MATH AND TECHNOLOGY

Randy Hudson

Science Teacher, Dana Hills High School
Capistrano Valley Unified School District

What is your vision of "innovation in education"?

"An innovative teacher makes the curriculum meaningful to students by bringing it to life."
Anonymous

Innovative Programs

Randy brings science alive for students by creating the "ultimate outdoor classrooms" that integrate a variety of disciplines. Through experiential learning in these outdoor classrooms, students have an increased level of involvement, better understanding of complex scientific processes and a long-term retention of key instructional objectives.

The **Turf to Surf** program (a long-term monitoring project of the San Juan Creek Watershed), Surfrider Foundation's Blue Water Task Force and Environmental Educational Center at Dana Hills High School, provide opportunities for students to conduct field research using a variety of equipment, analyze data, and report findings to their peers, community stakeholders and members of industry and academia. To further enhance the curriculum school-wide, chemistry students use the real-time data to derive the nitrogen cycle, AP Statistics students practice numerical analysis, and students in Integrated Science analyze the data during ecology and chemistry lessons.

Randy uses **technology** to make science accessible to all students. For example, students use digital probes to measure various water quality variables and digital photos of specimen slides at the microscopic level to have class discussions about biological concepts. Students collect, process, analyze, write reports and present their findings regarding coastal water quality using digital probes, a variety of sampling and processing equipment, Excel spreadsheets, email and websites.

Program Results

Students demonstrate a positive attitude towards science and increased participation. As a result of participating in the programs, students feel successful and no longer find science intimidating. Students routinely take more science units than required for high school graduation, and many seek out AP courses or pursue Physics, Calculus, or Marine Ecology.

Education's role in driving Orange County's economic competitiveness

"Educators have a responsibility to graduate students that demonstrate high levels of independence, dependability and competency. Additionally, students should demonstrate: critical thinking, problem-solving, proficiency in technology, oral and written communication skills, leadership and interpersonal skills."