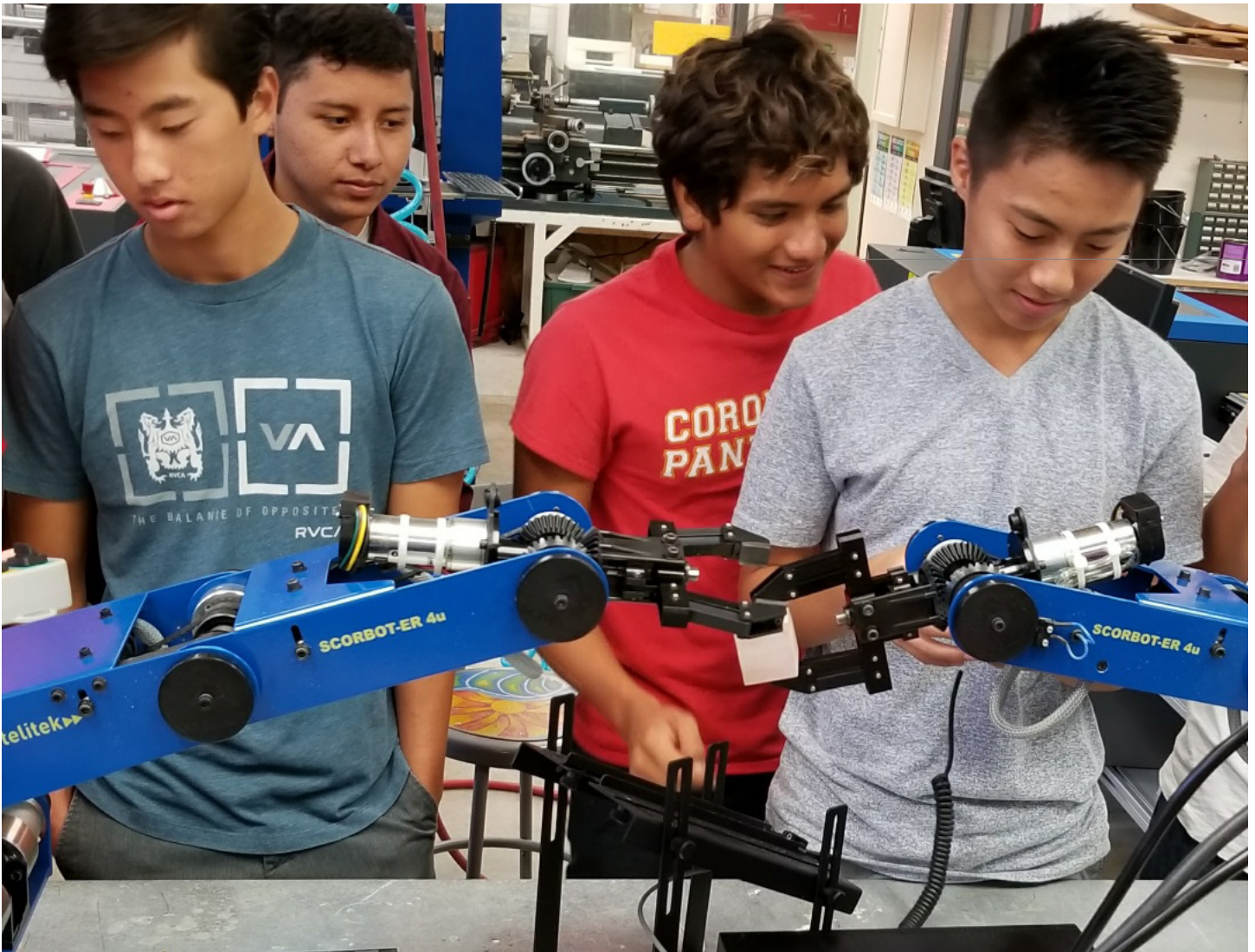


CASE STUDY

CORONA H.S. PLTW Success Story



An enhanced Project Lead the Way engineering program
inspires students to discover new pathways to career success



TECH LEARNING
CREATIVE THINKING
CAREER SKILLS



CORONA HIGH SCHOOL

Integrated engineering program opens up opportunities for students



Students at Corona High School's STEM Academy work on the Computer Integrated Manufacturing lab hands-on program.

“The PLTW Engineering Program at Corona High School in Corona, California, is designed to set the students up to give them the best real world breadth education to be able to go directly into the manufacturing field or to go to a 4-year college in some type of either engineering or manufacturing program.”

Eric Lee, Engineering Lead, Corona High School

HOW IT STARTED

Corona STEM Academy was started in 2014 with seed money from a California i3 Grant to help schools start a 4-year Project Lead the Way strand and then test the students over their four-year journey to see how they accepted the curriculum and to verify whether or not this style of STEM education provided better results upon graduation than their fellow students who were unable to take any PLTW courses.

As part of the Engineering and STEM Academy, students enrolled in the 4-year PLTW curriculum start the first year with Introduction to Design (ID). In the second year they take Principles of Engineering (POE) and then in the third and fourth years, students study Computer Integrated Manufacturing and Engineering Design and Development, which is based heavily Intelitek curriculum and equipment.

INTELITEK, PATON GROUP, CORONA H.S. PARTNERSHIP

With PLTW allowing flexibility in their curriculum, Eric Lee, the program lead proposed that the district take their curriculum and CIM lab to the next level and purchase a full CIM/FMS system from Intelitek that would allow the students to take what they had learned from the traditional curriculum and test

their learning in a more real-world application of automation. Corona High School was supported locally by Intelitek's exclusive California integration partner, the Paton Group.

Corona High School expanded the program with an impressive manufacturing cell, purchasing an ER9 robotic arm, a laser engraver, a ProMill 8000 CNC turning machine, as well as a linear slide base, palletizing system, pneumatic vise, and quality control camera. Now students can fully build, experiment and program a completely automated manufacturing cell.

“What I really like about this system is its flexibility; each machine can be used individually and the entire system is adaptable,” said Eric Lee, PLTW and Engineering Program Lead. “Students can program the robotic arm to pick up a part out of an automated parts feeder, drop it into a laser engraver, engrave it, retrieve it, place it in the ProMill 8000, machine it, retrieve it, place it under the document camera, check it for quality and then place it on a pallet if the part is acceptable, or place it in a trash bin if it doesn't pass QC. These are real-world operations of a pick and place robot used in industry.”

INTEGRATING HANDS-ON WITH THEORY

The unique component of the Corona Engineering program is the added hardware and software simulation from Intelitek.

Kris Johnson, a Math and Engineering teacher who teaches the Principles of Engineering part of the program, added with enthusiasm, "It's definitely the hands on stuff that gets them really engaged in the curriculum."

Eric Lee added, "I think students really like the culmination of theory with hands-on. Students start with theory, to get the idea behind the engineering and manufacturing, and the entire design process, and then they're able to translate that into the real world by actually getting to build products. They get to program robots and operate the Intelitek equipment."

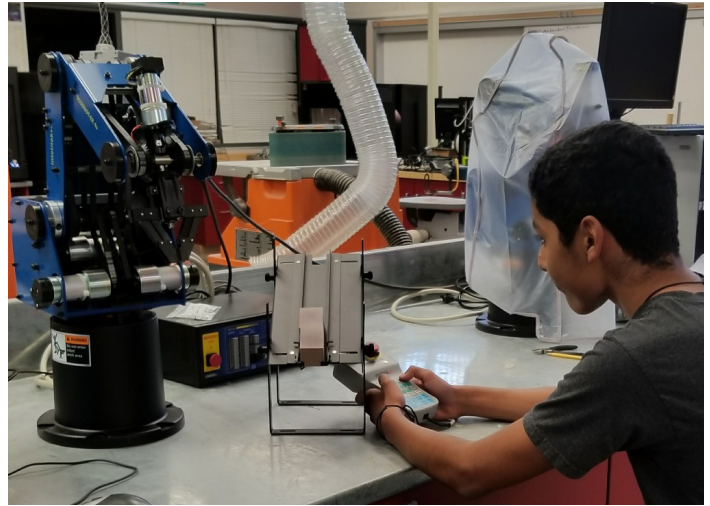
HOW EASY IS THIS?

Before Corona ever received equipment, Intelitek was integral in assisting with the design of the system on conference calls as well on site with local support from the Intelitek distributor, The Paton Group.

Once the equipment was delivered by the Paton Group, an Intelitek technician helped build and set up the equipment and then spent five more days to make sure that the equipment was operating correctly and that the teachers were trained to independently operate and teach the classes.

OPENING UP MULTIPLE PATHWAYS WITH PLTW

PLTW Engineering is more than just another high school engineering program. It is about applying engineering, science, math, and technology to solve complex, open-ended problems in a real-world context. Students focus on the process of defining and solving a problem, not on getting the "right" answer.



"It is absolutely amazing to see the level of hands-on experience our engineering students are engaged in at the STEM Academy. When we talk about college and career readiness, this is it!"

**DR. ANTONIO GONZALEZ,
PRINCIPAL OF CORONA HIGH SCHOOL**



The PLTW Engineering Lab at Corona High School

INTRODUCING ERIC LEE

Eric Lee is the lead teacher for the four year Project Lead the Way Engineering Pathway exclusive to Corona High School. His background is in manufacturing and plastics so Eric was excited to be able to introduce the Computer Integrated Manufacturing class into the program. Eric has been at Corona High School for 26 years and as a local resident, takes pride in CHS and his community!

SUCCESS STORY

"It has been exciting watching the instructors and students grow and evolve in this program. With support from the School Board and the Superintendent, the staff has been able to wisely invest state grant money to develop one of the top, if not the top, PLTW engineering & manufacturing labs in California. I am very proud of the Corona HS program as it provides students a rigorous and relevant education that prepares them to be college and career ready."

Gina Boster, Ed.D.
*Director, Career Technical Education, Educational Services,
Corona-Norco Unified School District*

"From the first day of class they are learning how to apply engineering concepts; it's not just reading from a book and taking a test. Students are provided with design challenges that let's them go through a similar learning process (with both successes and set-backs) as engineers in the field; they get to use the same machinery that is utilized by industry. There really is no better way to prepare them for their future than this type of hands-on learning."

Dr. Antonio Gonzalez, Principal, Corona High School

"I love the Intelitek software. It is easy to learn, has a user-friendly UI and has many interesting features. I also enjoy the fact that these skills could turn into possible internships."

NATHAN AYRES, STUDENT

"When I first learned of the STEM program, I was interested immediately. In middle school, I knew that I wanted to pursue a career in engineering and these classes have opened up a ton of opportunities."

MATTHEW MORALES, STUDENT



Eric Lee with students Odey Rabbady, 14, and Abraham Palomares, 14, as they work on a 3D model design for their Introduction to Design class

PARTNERED WITH THE PATON GROUP

Intelitek and Paton Group have been partners in California for over a decade. Paton Group are a reseller focused on education technology in areas of design, prototyping, advanced manufacturing and fabrication serving institutions in California.

Paton Group is staffed with highly trained and certified technicians. Their goal is to minimize disruption and ensure educational labs and classrooms are productive and successful.

Working with Intelitek, Paton smoothed the way to ensure a successful installation and supported the training at Corona High School.



ABOUT CORONA HIGH SCHOOL

Corona High School is one of five comprehensive high schools in the suburban Corona-Norco Unified District, and because of its long history, the school has close ties with the community. More than 10% of the staff members are Corona High graduates, and many of Corona's residents are alumni of the school.

Corona's course offerings reflect the diversity of the school community. Classes include career/technical classes, honors and advance placement, a four-year AVID program, English acquisition, sheltered classes in core subjects, visual and performing arts, and special education.

Corona High demonstrates its commitment to students in all areas by consistently striving to assess the needs of students to develop innovative teaching and supporting strategies.

In 2005, 45.1% of the students at Corona High School came from socioeconomically disadvantaged homes. Despite this, the school has one of the highest graduation levels in the state with 94.6%.

Corona High School strives to create a positive educational atmosphere and provide educators with skills and confidence necessary to operate effectively. Corona High School exhibits pride, high morale, order and discipline, and respect for individual rights and responsibilities.

