

2020-2021 IMPACT REPORT



**SCIENCE & TECHNOLOGY
EDUCATION PARTNERSHIP**

Inspiring students to pursue careers in
**Science, Technology,
Engineering and
Mathematics**

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Students entering Student STEPCon21 Science Show



Educator STEPCon21 Student Voices Video

STEP Program

Photos and
Student Quotes

STEM PUBLIC UTILITIES LEARNING LABS STUDENT PARTICIPANT WEEK 1 • 7/16/2021 • 5:12 PM

“What impressed me the most in STEM Summer Learning Labs is the learning experience that involves working with a team to try solving real problems within our community to improve our lives and the health of the environment by using STEM. The changes I would make in the lab are for it to be focused more on bringing hands-on experiment activities to further extend the learning experience on doing the “We are All Designers” process.”

STEM SOLUTIONS LEARNING LABS STUDENT PARTICIPANT WEEK 2 • 7/22/2021 • 7:50 PM

“The fact that this session incorporated the community as well, and how social and emotional health are affected in STEM Careers was really cool. Honestly, this has been a good year!”

STEM IN ADVANCED MANUFACTURING LEARNING LABS WEEK 3 • 7/29/2021 • 11:58 AM

“I was impressed most by the number of connections this STEM event has, with many tours, activities, and guest speakers. There was a lot of information to take in from all of the different parts of the manufacturing industry. It was certainly a lot of fun and there's a lot to learn from this event. I don't think any changes need to be made necessarily, but I think a lot more tours with bigger companies could be interesting.”

SPECIAL THANKS

It is with immense gratitude and our greatest appreciation that we acknowledge the sponsors and partners that make this work possible. Without their commitment to our community, STEP's ability to transform communities to create opportunities for all young people would not be possible.

Atom PLUS Sponsors



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It is with immense gratitude and our greatest appreciation that we acknowledge the In-Kind Sponsors that make this work possible. Numerous volunteer hours were donated as well as staff and resources. Without these partners, STEPs ability to transform communities to create opportunities for all young people would not be possible.



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Mathematics, Engineering, Science Achievement (M.E.S.A)
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Logos Education Systems
Garner Holt Productions, Inc.
UCR Marlan and Rosemary Bourns College of Engineering
IE Women in Manufacturing



The Mission of STEP is to inspire K-12 Students to pursue STEM education and STEM careers. STEP follows the adage that the best way to experience career opportunities is to “walk a mile in the shoes of a person working in that career.” STEP achieves its Mission at two levels:

The STEP Conference, a STEM-focused conference each October that provides STEM experiences to K-12 students and educators who attend this annual STEM conference which includes a Science Show, STEM exhibit booths and presentations, and workshops.

STEM Summer Learning labs are week-long STEM summer camps, which provide extended learning experiences for eighth to twelfth grade students to learn about STEM careers in their community in the areas of policing, fire-fighting, public utilities, manufacturing, and developing solutions to community problems with 40 contact hours per participant per program



**SCIENCE & TECHNOLOGY
EDUCATION PARTNERSHIP**

For 22 years, the STEP Conference has provided K-12 students an exciting engagement with STEM careers available in the Riverside and San Bernardino Counties of Southern California. The STEP Student Conference has included a Science Show conducted by engineers from General Atomics in San Diego in which they demonstrate many scientific principles in a way that reaches audiences of all ages. In addition, students experience a variety of exhibit booths representing various STEM careers including: the Navy, Engineering & Manufacturing, Environment, Education Opportunities, Medical Careers, and Technology. At these booths they interact with STEM professionals and learn how STEM is used in various careers in their communities. Pre-COVID-19, the STEP Conference was held over a two-day period for 5,000 students from throughout Riverside and San Bernardino Counties attending in person. However in 2020, we moved to an entirely online virtual experience. As a result, we saw our attendance numbers triple to almost 15,000 with global reach!

In 2017, STEP Summer Learning Labs were developed in partnership with the Riverside Police Department and Riverside Fire Department (STEM LEAPS).

Since then, we have developed the following additional week-long programs: STEM in Public Utilities, STEM in Advanced Manufacturing, and STEM Solutions. These programs provided eight through twelfth grade students 40 hours of hands-on learning focused on STEM careers. During each week, teams of students used an engineering design process called “We Are All Designers” to develop and then present a STEM project based on the information they learned. Student teams are awarded cash prizes for the top winners.

In 2018, the Educator Conference was developed to provide outstanding professional development for educators working with students in STEM. This conference is intended to inspire educators and develop their knowledge of best practices while working with their students in the classroom. Keynote speakers from all around the country, along with local educational professionals provide inspiration and information. However, the highlight of the event are the student scholarship winners who share how they were inspired by educators to prepare for their career in STEM.

HISTORY

STEP Board Chairman H I G H L I G H T

GORDON BOURNS

CHAIRMAN & CEO,
BOURNS, INC.



Gordon Bourns grew up working weekends and summers at the family business, Bourns, Inc., which his parents Marlan and Rosemary Bourns founded in their Pasadena garage in 1947. He received a BS degree in Electrical Engineering from the University of California, Irvine and an MBA in Finance and Marketing from the University of California, Los Angeles before he became a Bourns employee in 1973. During his 49-year career with Bourns, he has held positions in sales, marketing, engineering, quality assurance and manufacturing, as well as general management. He was elected Chairman of the Board in December 1988 by the Company's Board of Directors and currently serves in that capacity and as the CEO for Bourns, Inc.

Bourns, Inc. is a worldwide electronic company which manufactures more than 10,000 different products

at 20 domestic and international facilities, with over 9,000 employees. He currently focuses much of his attention on strategic planning to accomplish the Company's goals to achieve sustained profitable growth. He takes an active role in new product development and the selection and implementation of acquisitions. Gordon also leads the Bourns commitment to the Bourns Production System, which encompasses the six-sigma quality and lean manufacturing processes, to assure Bourns meets or exceeds customer expectations for high quality products and services. A significant part of the strategic planning process is focused on anticipating and satisfying the needs of customers in its primary markets, Automotive, Consumer, Industrial and Communications.

Gordon is a champion of STEM education (Science, Technology, Engineering and Math), serving as the President of STEP (Science & Technology Education Partnership), a consortium of Inland Southern California educators, business leaders and government officials, whose annual two-day STEP Conference piques the interest of 5,000 K-12 students in STEM careers. STEP also offers three week-long STEM Summer Learning Labs providing experiential learning about good STEM careers in our community and is committed to giving back to the city of Riverside a portion of the many benefits he, his family and Bourns, Inc. have received from it.

He is Chairman of the Riverside Police Department Foundation Board and a member of the Audit Committee for the Board of the UC Riverside Foundation. He serves as Chairman of the Board of Advisors for the Marlan and Rosemary Bourns College of Engineering at UC Riverside and is a Past Chairman of the Board of Visitors at California Baptist University. He is also CFO on the School Board for the Woodcrest Christian School System. Gordon, an Eagle Scout, is a past recipient of the Inland Empire Boy Scouts Distinguished Citizen of the Year Award. In 2010, Gordon, his parents, Marlan and Rosemary Bourns and the other members of the Bourns Family were honored to receive the Spirit Award for Lifetime Achievement from California State University, San Bernardino. In 2013, he was honored by the American Diabetes Association to receive the Father's Day Council Father of the Year award. In 2015, he was named Fellow of the Bourns College of Engineering and has also received Mayor Rusty Bailey's Riverside Spirit Award.

Gordon is greatly blessed in his 43-year marriage to his wife, Jill. Together they are the proud parents of four children and active grandparents of six grandchildren.

STEP BOARD EXECUTIVE OFFICERS AND DIRECTORS

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For the past six years, STEP has conducted its STEM Summer Learning Labs for students from grades 8 to 12. Based upon the Kaizen Week process (Kaizen means good change in Japanese) used at Bourns, Inc., an electronics company headquartered in Riverside, students participated in three week-long STEM Summer Learning Labs from Monday, July 12 through Friday, July 30. Working in teams of 4 or 5, during the first 3 days of each week, the students learned about STEM career opportunities by taking virtual tours and participating in interactive webinars in areas such as on-the-job demonstrations, case study presentations or manufacturing plant tours. They learned about tools used in those careers including Geographic Information Systems (GIS), 3D printing, model-making, business simulation and making effective presentations. Throughout the week, the teams used an R&D Process to develop and then present at the end of each week to their peer students and to a distinguished panel of judges, their innovative STEM Design Challenge Projects. Their projects focused on improving the safety and effectiveness of our public servants or improving the quality of life in our communities or improving manufacturing practices or products. Each of the teams competed to share scholarship awards of \$1,000 for 1st place, \$750 for 2nd place and \$500 for 3rd place.

The first week, July 12 to 16, STEM Public Utilities Learning Labs (STEM PULL) was conducted for 43 students by STEP in partnership with Riverside Public Utilities, Elsinore Valley Municipal Water District and Western Municipal Water District. The week was focused on the careers of our public servants and the STEM tools they use to keep our water and power safe and secure. Activities included touring RPU's Wastewater Treatment Plant, the Riverside Energy Resources Center (Peaker Plant), water supplies and facilities of EVMWD and WMWD. A highlight was a demonstration by linemen about how they repair down power lines and how to remain safe when power lines are down as well as how our water supplies are kept clean.

The second week, July 19 to 23, STEM Solutions was focused on the Five Pillars -- the Social Determinants of Health from the US Department of Health: (1) Economic Stability, (2) Education Access and Quality, (3) Neighborhood and Built Environment,

(4) Social and Community Context and (5) Health Care Access and Quality. Riverside Mayor, Patricia Lock Dawson opened the week with a keynote speech about the Five Pillars and how they are linked to her key objectives for Riverside. The 35 students who attended heard presentations by and interacted with panels on each of the topics and saw first-hand the achievements of Alianza in the Coachella Valley to improve the public services, roads and parks for the residents of the local communities.

The last week, July 26 to 30 was STEM In Advanced Manufacturing (STEM IAM) during which the 37 students learned core principles of effective manufacturing through hands-on experience. During virtual tours of manufacturing companies including Garner Holt Productions, Perricone Farms, Carbon 3D, Fender Guitars and AMAZON, they saw how those manufacturing principles were being applied. In addition to the Design Challenge, in which the teams of students presented their project to make a new product or improve products they saw during the first three days, the teams also participated in a business simulation game. Their decisions over eight quarters of play included product pricing, how much to invest in engineering and quality improvement, whether to build more production capacity and hire additional salesmen and the amount of dividends to pay to their investors.

Over half the students participated in all three of the 2021 STEM Summer Learning Labs and there were about the same number of girls as boys attending each week. You are encouraged to use the following links to see our 2021 STEM Summer Learning Labs and their recorded sessions:

STEM in Public Utilities Learning Labs (July 12 to 16)
<https://sites.google.com/view/stempull2021/home>

STEM Solutions (July 19 to 23) <https://sites.google.com/view/stemsolutions2021/home>

STEM in Advanced Manufacturing (July 26 to 30)
<https://sites.google.com/view/stem-manufacturing-2021/home>



STEM PULL, July 2019, Riverside, CA.

This was our fifth year hosting a full conference for educators in our region. The premier STEM focused educator conference in the Inland Empire, Educator STEPCon 21 went fully virtual. Held over two days on October 5 and 6, 2021, the conference attracted 169 registrants that included classroom teachers, district staff, administrators and district and county education staff. With the persisting challenges presented by the pandemic, including a severe shortage of substitute teachers across both counties, we were pleased with the participation level at this year's event.

The conference counted with content and speakers that represented a diversity of STEM disciplines and educational levels. From practicing classroom teachers, to district teacher support staff and personnel, to UCR engineering faculty and even a former mayor of Riverside, participants gained a multi-faceted perspective and insight into STEM teaching and practice in our region.

Conference participants spoke well about what they experienced at Educator STEPCon 21. Some quotes to share:

"It (conference) makes me feel more excited about teaching science..."
Elementary School Educator

"I appreciate the opportunities you provide me and my students!"
Middle School Educator

"Good resources and information... good conference!"
High School Educator

A highlight of our last three educator conferences has been the recognition and awarding of scholarships to outstanding Inland area youth from both San Bernardino and Riverside Counties. Applicants must demonstrate the impact and effect of STEM education on their lives through a pre-recorded video presentation. Recognized applicants receive the opportunity to address conference participants through a general session presentation. This year it was our pleasure to award \$1,000 scholarships to three very deserving students whose stories and experiences resonated with our committee and educators everywhere. As the conference was fully virtual this year, their videos were instead featured on our conference virtual platform and youtube channel:



Our three STEM Scholarship Recipients!

To watch the students' award winning video presentations, please visit:
<https://www.youtube.com/watch?v=0ViOk7aoxNU>



As the premier student STEM conference in the Inland Empire, we held a hybrid event on October 7, 2021. A hybrid event allowed for participation either in person or virtually so that students from throughout the Inland Empire could engage.

We had a total of 13,780 students attend either in person or virtually, either through their classroom teacher registration or their own individual registration. By allowing students to individually register, the engagement of students increased greatly. Our average participation time virtually was over 2 hours which is comparable to our live program.

SCIENCE SHOW HIGHLIGHT

Once again the engineers of General Atomics, led by Rick Lee and Alex Nagy, presented the Science Show, which continues to be a student favorite. This year's show demonstrated how Physics plays out in our world. Students were delighted with a Bed of Nails, Air Zooka/Smoke Cannon, and a Bowling Pendulum.

"I liked the science show mostly out of anything. The way they were acting made the show very exciting and taught me lots of things of how science works on earth and how it affects earth." (student attendee, STEP-Con21, October 8, 2021)

Students shared that after attending STEP-Con21, they believed:

- ~ Attending college is important
- ~ A STEM Career would be rewarding

"What I liked most about STEPCon21 was that it made me look inside myself and what I wanted to do." (Student Attendee, STEPCon21, October 8, 2021)



Science Show, STEPCon21, Riverside, CA.



CBU Society of Automotive Engineer (SAE) racer,, STEPCon21, Riverside, CA.



UCR BioMedical Engineering Society (BMES), STEPCon21, Riverside CA.

EXHIBITOR HIGHLIGHT

Nearly 50 exhibitors participated in the virtual event while 16 exhibitors participated at our in-person event. They represented various STEM careers including the Navy, Engineering & Manufacturing, Environment, Education Opportunities, Medical Careers, and Technology.

"The most thing that I like about STEPCon is that I can see what my job will be and I can see definite things and info what my job going to be." (student attendee, STEP-Con21, October 8, 2021)

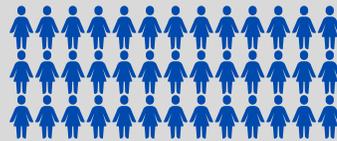


SCIENCE & TECHNOLOGY
EDUCATION PARTNERSHIP™

OUR OVERALL IMPACT

14 K KIDS

Participated in our
hybrid STEP programs



EDUCATORS **228**



engaged in STEM
learning

43,000 HOURS OF STEM
EDUCATION



200

SPONSORS – PARTNERS –
EXHIBITORS – VOLUNTEERS





THE INLAND EMPIRE

The Inland Empire (locally known as the I.E.) is a region in Southern California; an urban and metropolitan area centered around the cities of Riverside and San Bernardino. The Inland Empire is located east of Los Angeles County.

The Inland Empire is sometimes considered coextensive with the federally-defined Riverside-San Bernardino-Ontario metropolitan area, which covers more than 27,000 square miles (70,000 km²) and is part of the Greater Los Angeles area. Home to over 4 million people, the metropolitan area consists of Riverside County and San Bernardino County, is the 13th most populous metropolitan area in the United States, and the third largest in the State of California.

At the end of the 19th century, the region was a major center of agriculture, including citrus, dairy, and wine-making. Agriculture declined through the 20th century, and since the 1970s a rapidly growing population, fed by families migrating in search of affordable housing, has led to more residential, commercial, and industrial development.

**A SPECIAL THANK YOU TO ALL OF OUR PLANNING
TEAM MEMBERS WHO SUPPORT THE BUILDING OF A
STEM CULTURE IN THE INLAND EMPIRE BY BRINGING
OUR STEP PROGRAMS TO LIFE.**

STEM SUMMER LEARNING LABS

Gordon Bourns, Lead
Debra Johnson
Steve Kong
Christalle Hart
John Enyeart
Jordan Smith
Damaris Velez
Dennis Sonney
Sarah Emerson
Will Ferguson
Ben Nunnally
Sharon Gutierrez
David Budai
Jeremy Hobbs
Rebecca Meyer
Gina Perez
Jennie Pauli
Kevin Kauk
Troy Banks
Eric Detmer
Kaitlyn Wu

STUDENT STEPCON

Debra Johnson, Lead
Ashley Fulmer
Brad Werking
Carlos Gonzalez
Dana Baron
Doug Henderson
Eboni Wells
Greg Nicholas
Heather McDonald
Henri Shimojyo
Jill Barber
Jimmy Johnson
Juanita Chan
Kelley Ambriz
Khevin Curry
Kim Terry
Lynn Figurate
Shannon Dadlez
Yamileth Shimojyo

EDUCATOR STEPCON

Kim Terry, Co-Lead
Carlos Gonzalez, Co-Lead
Henri Shimojyo
Omar Safie
Beth Acueto
Mary-Elizabeth Quan
Steve Kong
Christalle Hart

OUR PLANNING TEAM MEMBERS



Outdoor Exhibits, Student STEPCon 21, Riverside, CA.



Set up for the Science Show, STEPCon21, October 8, 2021



STEM LEAPS, July 2020, Riverside, CA.



STEM LEAPS, July 2020, Riverside, CA.

