

Diversity, Equity, & Inclusion in STEM 2021 Annual Report





LETTER FROM THE BOARD PRESIDENT AND EXECUTIVE DIRECTOR

Dear Friends:

The Elementary Institute of Science was established as more than a science education organization. The phrase "diversity, equity, and inclusion in STEM" has come into wide use some 47 years after EIS was founded, yet it has always been at the core of our mission and work. Our founder, Tom Watts, and other committed educators and community residents knew that students of color were not receiving the same education as their white peers. Consequently, they would not have the same career opportunities. The primary purpose of EIS is a commitment to increase educational equity for the children in the southeastern San Diego community. That does not mean that children from other parts of San Diego aren't welcome here. They most certainly are and always will be. But our focus is where the need for STEM enrichment opportunities are highest, and that remains the culturally rich and diverse southeastern San Diego community.

A study published earlier this year by STEM Connector underscores the growing need to diversify the STEM workforce. It found that Black and African Americans make up 12 percent of the adult population in the United States but only 7 percent of STEM highest degree holders and 6 percent of STEM workers. Latinx people fare no better, representing 16 percent of the US population and 8% of the STEM workers. Women make up only 29% of the STEM workforce. Racial and gender gaps increase in the fastest-growing and highest-paid jobs like computer science and engineering.

Why should we care about the diversity of the STEM sector? STEM careers are a great pathway to upward economic mobility. For communities enduring long-standing economic disparities, STEM careers can be a way out of poverty. Just as importantly, a diverse STEM workforce will provide a broader perspective to meet the challenges the world faces in the 21st century. We should care about diversity in STEM for economic and ethical reasons and for making progress in science and society.

As you read this year's annual report, we hope you feel a sense of pride in EIS's accomplishments. They were made through the hard work and commitment of many people—staff, partners, board members, supporters, parents, and of course, our students. We end this year with gratitude, hope, and a new tagline, Diversity, Equality & Inclusion in STEM. We like the sound of that.

Sincerely,

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Debra Roy Board President

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James D. Stone Executive Director





EIS Mission Inspiring a love of science and creating opportunity for diverse children and youth.

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THE DIGITAL DILEMMA

One of the fundamental hallmarks of EIS's science education programs is the hands-on learning environment we create. Students learn science by doing science. It's the way we have taught and created a love of science for our students over the past 56 years. Learning in our labs with updated technologies and instructors with STEM expertise gives students a glimpse into the varied possibilities of STEM careers. While we hoped that inperson learning would resume in the fall of 2020 for our Steps-2-STEM program, the COVID-19 pandemic had not subsided, and instruction was again only going to be provided online in San Diego public schools. To help support our Lincoln Cluster partner schools, EIS agreed to provide science lessons via Zoom during the school day. Working directly with students during class hours was a significant departure from previous years when Steps-2-STEM took place after school. However, it was a great opportunity and a challenge to turn a remote, virtual learning experience into a hands-on lesson.

EIS Curriculum Specialist Danika Garcia rose to the challenge and converted all of the curricula designed for EIS labs into hands-on activities students could do at home. The new plan called for our instructors to provide direction to the students in real-time via Zoom. Even though the hands-on activities called for easy-to-get materials, we knew it might be a challenge for busy parents to ensure their children had everything needed for each science lesson. Over several months, our education staff jumped into action and assembled, curated, and packaged materials to create more than 2,000 science kits. We delivered a batch of kits to each school every month, and parents stopped by to pick them up for their kids to use at home. Then, when it came time for our instructors to teach the lessons, they let students know which kit to use and led them through the activity.

For example, we taught chemistry by making a lava lamp to compare and contrast mixing substances that don't undergo a chemical reaction and mixing substances that experience a chemical reaction. For another lesson in life sciences, students set up a terrarium to demonstrate how living things and non-living things interact with each other. Students observed how air, water, and nutrients move among plants and the environment and diagramed the movement of air and water between the biotic and abiotic components of the terrarium, incorporating aspects of the water cycle and photosynthesis. This activity kit had all the materials to create a terrarium, including soil, horticultural charcoal, and plant seeds.

With each child conducting their activity during the lessons, we saw dramatic increases in student interest and engagement. While nothing can take the place of in-person learning in our labs here at EIS, we were still able to capture the hearts and imagination of students to inspire a love of science and help open up a world of opportunity.



During COVID-19 school closures, our education staff jumped into action and over the course of several months assembled, curated, and packaged materials to create more than 2,000 science kits.



"The way we see things is the source of the way we think and act; I want the children in our community to see the richness they bring to the world and the world to see EIS as the beacon for STEM Excellence."

Debra Roy, Board President

It does not matter how strong your personal opinions are. If you do not use your power for positive change. – Coretta Scott King

Patsy Tomlin joined the EIS Board of Directors in 2013 and became President of the Board in 2015. She came to EIS with strong opinions about social justice and educational equity. Patsy applied her power at every possible level to support EIS and increase access to STEM enrichment for in the southeastern San Diego community. There is not enough room to list the many ways she contributed to positive change at EIS and beyond. When EIS Executive Director, Mrs. Doris Anderson, retired after 27 years, Patsy acted as the full-time Executive Director for a year without compensation. Patsy believed that EIS should be a resource for families in southeastern San Diego. She worked to eliminate obstacles to participation in EIS programs such as transportation, costs, and language barriers. Patsy utilized her superpowers of dedication, intelligence, and charm to champion for EIS at every opportunity. Because of her hard work and persistence, the doors of EIS and opportunity are open wider for community children to explore science and reach their potential. Patsy completed her term as Board President in June 2021. We are forever grateful for her vision, service, and the absolute pleasure of working with her.

Debra Roy was elected as the new EIS Board President in June 2021. Ms. Roy is a Staff Engineer in the Engineering Process and Metrics Department at General Atomics and supports engineering and continuous improvement efforts. She became involved with EIS as an inspiring speaker at the first graduation ceremony for Girls Take Flight and joined the board shortly after.

Ms. Roy has a passion for exposing youth to Science, Technology, Engineering, Art, and Math (STEAM). Looking forward to her new role, she holds high aspirations for EIS, "The way we see things is the source of the way we think and act; I want the children in our community to see the richness they bring to the world and the world to see EIS as the beacon for STEM Excellence."

As a lifelong resident of southeastern San Diego, EIS alumni parent, and exemplary role model, Debra brings local insight and perspective to guide EIS moving forward. Ms. Roy holds a BS in Physics from Southern University, an MBA in Technology Management from the University of Phoenix, and a Certified Six Sigma Black Belt (CSSBB) credential. In addition to the Board of EIS, she also serves on the San Diego Children's Discovery Museum board. For the past 15 years she has also volunteered as a Judge at the FIRST Robotics Regional Competition. She approaches everything she does with optimism, compassion, and wisdom. Debra values EIS's rich history and is excited for possibilities that the future holds.

THE SUMMER OF LOVE OF SCIENCE

Reopening our doors for summer camp was not a decision we made lightly. There were many conversations about how it would work and if it would be safe enough. Ultimately we looked to science and health guidelines to reopen camp as safely as possible without sacrificing the importance of hands-on learning. Through reduced camp size, keeping students within small groups, increased sanitation, and wearing masks, a return to summer camp was a welcome experience for both kids and staff.

In the summer of 2020, the labs of EIS were quiet as we provided free virtual summer camps for students in response to the COVID-19 pandemic. This year, the sound of children's voices and laughter returned ringing through the halls as they experimented, discovered, and learned. Their exuberance and curiosity were a joyful reminder of the work that we have done for more than 50 years. Learning in-person for students meant reuniting with classmates, making new friends, and getting their hands dirty – literally covered in dirt during garden week! Whether they were learning about circuitry or coding, chemistry or composting, students' natural curiosity was evident in their excitement and participation. After a year of students learning on screens, in-person learning was rejuvenating.

In place of traditional field trips, students were introduced to STEM careers through a variety of guest speakers. Scientists and engineers visited EIS in-person and virtually to share their STEM career knowledge along with engaging lessons about genomics, climate change, and more. Virtual field trips introduced students to even more STEM professionals and Ph.D. students working in a wide array of fields. In marine biology labs, students learned about bioacoustics research, bioengineering, and the climate of the Central Arctic. High school interns from Vertex hosted a career panel about their experiences as interns and navigating the rigors of high school. During astronomy week, student's experiences included meeting an astrophysicist working on the Simons Observatory, a collection of telescopes in the Atacama Desert in Chile and NASA space exploration. These are just a few examples of the exciting STEM experiences during the summer of love of science.

We are proud to have collaborated with several STEM organizations to create a well-rounded summer camp. Those included NASA, NOAA Marine Mammal and Turtle Division Southwest Fisheries Science Center, Vertex Pharmaceuticals, Illumina, Square Brain, Scripps Institution of Oceanography, UCSD Astrophysics and Space Sciences, SDSU Global Change Research Group, Climate Science Alliance, ClicBitz (3D-Printing & Computer Design), Tijuana River National Estuarine Research Reserve, and the Foundation for Animal Care and Education.





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Our FIRE Up! technology camp for middle school girls also returned this summer. This fun and interactive twoweek camp introduced students to multiple technology careers and female STEM professionals. Led by female instructors, 47 girls learned about computer coding, engineering, and design. This included learning to fly drones and program robotic devices. For the final week of FIRE Up! we collaborated with local nonprofit Greater Than Tech, which provided a workshop blending engineering and business. Students created a product for a self-driving car and pitched the product through interactive presentations to a panel of volunteer judges. Parents were able to watch their daughters' presentations through a live stream. A top objective of FIRE Up is to raise awareness of STEM technology careers among middle school girls. To evaluate the camp, we used the same survey tool that we use for Steps-2-STEM, FIRE Up! participants scored 33 percentage points higher than the national benchmark on STEM career knowledge and exceeded the national average in the STEM identity, perseverance, and critical thinking categories.

Summer camp wouldn't have been the success it was without the quality instructors who are the engine of our programs. As a few long-term EIS instructors moved into new STEM careers or went off to graduate school, we welcomed several new STEM instructors to join our team. They taught an engaging and fun summer camp. Their classes captivated student's attention and inspired us all with their fortitude to teach STEM during this pandemic. In addition, we had 31 high school students volunteer as Teen Lab Assistants during summer camp that earned community service credits and increased their STEM knowledge. Young summer campers really look up to the Teen Lab Assistants. With the instructors they were great STEM role models for the students.

This year, The San Diego Foundation and the San Diego Unified School District, Level Up San Diego Summer of Learning and Joy provided 319 scholarships to attend EIS camps. The Level Up initiative introduced even more students and parents to EIS programs. Getting back to hands-on learning in the EIS Learning Center was revitalizing. We are stronger than ever in our resolve to provide exceptional STEM experiences to the students who need it most.







MEET EIS ALUMNI



"I attended EIS throughout elementary school and middle school and then I came back as a volunteer the summer before my junior year of high school. EIS definitely jumpstarted my interest in STEM. It was a good introduction to various avenues of STEM. My favorite memories at EIS came when I was a volunteer. It was encouraging to see the next generation develop an interest in STEM, the same way I had the opportunity to."

Sarah Roy Material Planner at L3Harris EIS Alumni



"I didn't know it at the time, but EIS piqued the curiosity of a young mind, really sparked my interest to learn more, and was fascinating all at the same time. The key was exposure to different educational programs, programs that setup an empowering future. The socioeconomics in the area prevented most kids from knowing EIS was an option, and that the bridge to something special was possible. I remember EIS being a lot of fun, experiencing a unique type of education that actually pulls you in, and being exposed to a lot of new and exciting things."

Paul Robinson

Founder & CEO Ensunet Technology Group EIS Alumni



"EIS was my first exposure to STEM as a child. It was an opportunity to learn topics not offered in public school such as engineering, geology, and photography. I was among peers from similar backgrounds, which made me feel comfortable exploring my interest without judgement or feeling like I didn't belong. EIS also provided me with an opportunity to continue pursing my interest in science and education as a junior assistant and instructor. Currently, as a chief resident for my department, I am not only a physician but also a medical educator. As an instructor at EIS, I developed a love for teaching physiology, which is what I do now!"

Adali Martinez

Chief Resident for University of California San Francisco (UCSF), Department of Medicine EIS Alumni

FINANCIAL INFORMATION





Programs\$700,128Administrative\$116,465Fundraising\$171,373Total\$987,966

Financial information is pending the final audit report for FY 2020-21



MAKE A LASTING IMPACT NOW!

Education is as important to children's development as food, shelter, and medical care. EIS is working hard with schools and parents to help keep students engaged in learning.

Now more than ever, we need your support. Just as there many different ways your support helps, there are many different options to support EIS.

Make a **recurring donation** on a monthly, quarterly or annual basis.

Create an online **Peer 2 Peer Fundraiser** and rally your family, friends, and coworkers to support EIS.

Make a **Planned Gift** by including EIS in your estate plans.



Ask your employer if they have an Employee Matching program and double the impact of your donation.

Make an Endowment Gift to create your own science legacy and help sustain EIS in perpetuity.

Stay Updated!

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