



RÍO HONDO COLLEGE



Annual **State of STEM Report** 2022-2023

Welcome Message



I am proud that Río Hondo College is a leader in graduating successful STEM graduates who go on to make a difference in the world and their local communities. In addition to the classroom experience, our faculty are providing students with opportunities to gain hands-on research exposure and build a foundation in laboratory skills that will serve them in years to come. We are excited to celebrate the accomplishments of our STEM students with our campus and local community.”

– **Marilyn Flores, Ph.D.,
Superintendent/President**

Río Hondo College prioritizes the success of all its students and offers a comprehensive program to cater to their diverse needs. This includes our STEM program, which is bolstered by a \$2.8 million, five-year Department of Education Title V grant to fund Enlace – a pilot student success program that provides support services to the College’s STEM students.

This grant has been used to boost excellence in fields such as biology, chemistry, computer science, engineering, environmental science, mathematics and physics. Enlace, which is Spanish for weave, provides support networks and engagement opportunities to promote the retention and success of STEM students. The program also fills a gap in community college instruction for independent research opportunities, which are typically more prevalent at four-year colleges and universities.

Enlace funds supplemental instruction to promote the success of students in select math and natural sciences courses as well as the annual Discover STEM Conference, which provides local high school and current Río Hondo College students with information and opportunities regarding various STEM career pathways.

This inaugural State of STEM Report highlights the STEM-related accomplishments of Río Hondo College students, faculty and staff from the 2022-23 academic year. It offers a brief snapshot of a much larger picture of the programs, people and events that make the College shine as a beacon of hope for those who want to improve the world through STEM.



Equal in importance to the knowledge and skills learned in the classroom is the relationship that is created between the student and the mentor. All scientists, engineers and mathematicians can point to one person and say, ‘that’s the person who turned me from a student into a professional.’”

– **Vann Priest, Ph.D., Dean of Mathematics, Sciences and
Engineering Division**

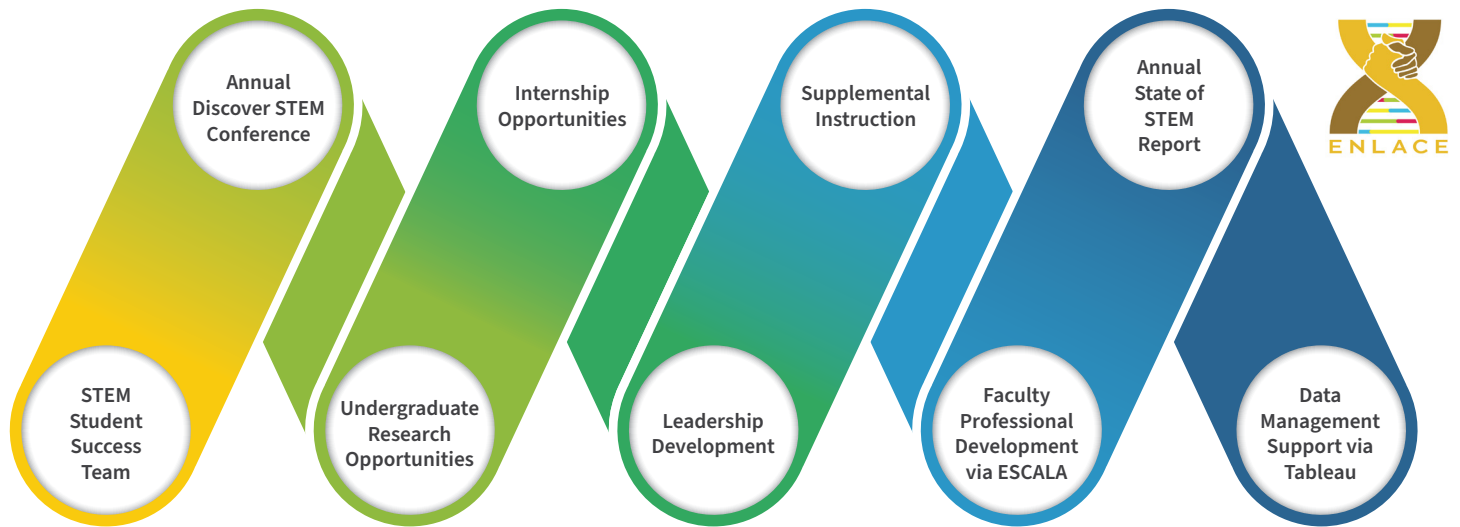


What is Enlace?

Enlace is a Title V grant-funded program sponsored by the U.S. Department of Education to promote the degree attainment of STEM students at Río Hondo College.

Enlace Sponsored Activities

- Support via the STEM Student Success Team, including referrals to on-campus resources to promote student achievement
- Annual Discover STEM Conference, which invites local high school and current Río Hondo College students to learn more about STEM academic and career pathways
- Paid undergraduate research opportunities
- Paid internship opportunities
- Leadership development programming
- Supplemental instruction available to all students in select math and natural sciences courses
- Faculty development opportunities through ESCALA Educational Services
- Annual State of STEM Report highlighting STEM achievements across the College
- Data management support for the campus via Tableau



Meet the Enlace Team



Vann Priest, Ph.D.
Project Director



Molly Morin, Ph.D.
Grant Manager



Gerson Montiel
Faculty Coordinator



Juan Pedroza
Student Services Assistant

Overview

Río Hondo College's STEM offerings include pathways for associate of science degrees and associate of science for transfer degrees in biology, chemistry, computer science, engineering, environmental science, environmental technology, general studies with an emphasis in science and mathematics, geology, mathematics and physics.

The College's STEM pathways include resources such as Math, Engineering, Science Achievement (MESA)/TRIO Student Support Services (SSS) STEM, honors transfer opportunities, teacher preparation pathways and more.

Río Hondo College also offers other science and technology programs such as health science and nursing and career and technical education.

Please scan the QR codes for more information.

Innovation
Observation
Problem-Solving
Imagination
Curiosity
Collaboration
Hypothesis
Research
Discovery
Exploration
Investigation
Creativity



STEM PROGRAMS



HEALTH SCIENCE
AND NURSING



CAREER & TECHNICAL
EDUCATION

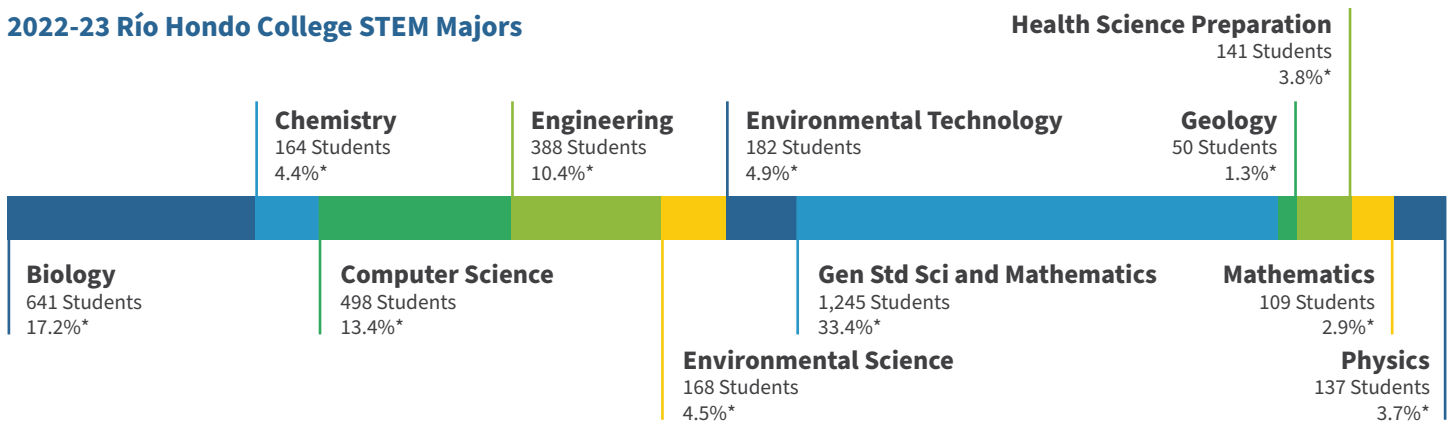


STEM Enrollment and Transfers

Participation in undergraduate research and internship opportunities are invaluable experiences for STEM students. During summer 2023, 73 STEM students were selected to participate in these career-building opportunities.

During the 2022-23 school year, 3,723 Río Hondo College students declared STEM majors. The Class of 2023 STEM graduates earned admission to several prestigious institutions including the University of Southern California, University of California, Berkeley, California Polytechnic State University, Pomona and the University of California, Davis.

2022-23 Río Hondo College STEM Majors



*Percentage of total STEM Students

Río Hondo College STEM Associate Degrees Awarded for the 2022 Calendar Year

231 Total

Associate of Science in Biology	21
Associate of Science in Chemistry	7
Associate of Science in Computer Science	4
Associate of Science in Engineering	17
Associate of Science in Environmental Technology	6
Associate of Arts in General Studies: Science & Mathematics	2
Associate of Science in General Studies: Science & Mathematics	134
Associate of Science in Mathematics	23
Associate of Science in Physics	17



These success teams allow us to help more students complete their educational goals, which is a big deal in helping close the completion gap.”

– Viviana Villanueva, *STEM SST Lead Counselor*

STEM Student Success Team Overview and Student Support

The STEM Student Success Team (SST) aims to provide support to all STEM students working toward their academic and career goals at Río Hondo College. Veronica Holbrook, Ed.D., serves as the team’s faculty liaison and Viviana Villanueva serves as the STEM counselor. Desiree Pimentel, Río Hondo College alumna and current biochemistry major at the University of California, Riverside, works as the STEM Student Success Coach and leverages her experiences to support current STEM students.

During 2022-23, the STEM SST hosted workshops on:

- Filing graduation petitions
- Developing a student educational plan
- Dealing with math anxiety
- Navigating class registration
- Applying to transfer to CSUs and UCs, including how to apply to a UC with the Transfer Admission Guarantee
- Submitting the FAFSA application



I enjoy the opportunity to encourage and empower students as they work toward their goals. I hope to be a part of making their journey a little bit easier to navigate.”

– **Veronica Holbrook, Ed.D., STEM Faculty Liaison**

STEM Student Support and Scholarships

MESA|TRIO SSS STEM

The goals of the MESA|TRIO SSS STEM programs are to support student retention and success by providing a STEM study center with academic services such as tutoring, priority registration, academic counseling, transfer and career advising and networking opportunities.

The MESA program aims to serve student groups who historically have had the lowest levels of attainment to four-year and graduate-level programs and is funded by the California Community College Chancellor’s Office. TRIO SSS STEM is funded by the U.S. Department of Education and is designed to support first-generation, low-income undergraduate college students majoring in STEM and pursuing transfer to a four-year institution in a STEM major.

The MESA Program was first implemented at Río Hondo College in 2008 by Gisela Spieler-Persad, Ph.D., professor of mathematics. In 2010, the College added the TRIO SSS STEM program, to offer additional support for students. The program has supported approximately 900 students since its inception, with more than 400 who have gone on to earn bachelor’s degrees, complete graduate/professional degrees and pursue careers in the STEM field.



Being involved in MESA|TRIO means growing and learning to be a better STEM student and being more proficient in problem-solving and collaboration. Additionally, it means expanding my horizons in the STEM field through participating in the Society of Advancement of Chicanos/Hispanics & Native Americans in Science, summer research programs and more.

– **Humberto Marquez, Ecology Major**



The STARSS 2.0 program has had a huge impact on me. Since I have received this scholarship, I have continued to apply for more scholarships because it helped me realize that I am competitive and can also receive numerous awards. Each quarter, I improve and become closer to making my dream of becoming a scientist a reality.”

– **Pretty Garcia, Biomolecular Engineering and Bioinformatics Major**

STARSS 2.0

The Scholarships to Aid Río Hondo STEM Students (STARSS 2.0) program provides grants to academically talented students who demonstrate financial need and intend to transfer to a four-year college/university to complete an undergraduate degree in a STEM major. Recipients receive \$6,000 each year for up to three years of full-time academic study, including in the first semester that the recipient transfers to a four-year college/university.

In addition to receiving scholarship support, recipients are assigned a faculty mentor from Río Hondo College’s Mathematics, Sciences and Engineering Division to provide one-on-one support. STARSS 2.0 is funded by the National Science Foundation Grant #1930037, with the goal of expanding and retaining the STEM talent pool while increasing the number of STEM graduates and STEM transfers.

STEM Events and Opportunities



STEM Family Festival

On March 11, 2023, the Río Hondo College Math, Sciences and Engineering Division hosted its first STEM Family Festival. This free event was open to the community for families to experience hands-on experiments in chemistry, physics, engineering, biology and more. The festival aimed to inspire local students to engage more in science-related fields and opportunities. More than 700 attendees joined in on the festivities.

Second Annual Discover STEM Conference

On April 22, 2023, Title V Enlace hosted the Second Annual Discover STEM Conference. This event invites local high school students and current Río Hondo College students to hear Río Hondo College STEM alumni share their college experiences, their respective STEM academic journeys and current career experiences. Attendees also had the opportunity to attend a resume-building workshop that could help students obtain internship, job and scholarship opportunities.



NASA Space Grant Internship

Under the guidance and mentorship of Professor Chris Vaca, 12 Río Hondo College STEM students participated in the summer 2023 NASA Space Grant Internship Program. This program allows participants to work with other future scientists and STEM majors to create their own microelectronics projects dedicated to helping lunar colonization and earth geoscience.

STEM Undergraduate Research Opportunities

SURE Program

Twenty Río Hondo College STEM students participated in the 2023 Summer Undergraduate Research Experience (SURE) Program, a partnership between Río Hondo College's Title V Enlace Grant and California State Polytechnic University, Pomona. SURE is a research experience where partnering community colleges send STEM students to take part in full-time, high-level faculty-mentored research projects over an eight-week program.



TRAINS

During the 2022–23 school year, four Río Hondo College STEM students participated in Transitions and Research Across INterfaceS (TRAINS). TRAINS is a multi-institution collaboration funded by the National Science Foundation's Division of Equity for Excellence in STEM: Hispanic Serving Institutions program. It is a joint effort between Río Hondo College, the University of Southern California and the University of California, Santa Barbara Center for Science and Engineering Partnerships and is dedicated to increasing the representation of women and underrepresented minority students in biological and physical sciences. Physics Professor Christian Vaca, Ph.D., serves as the TRAINS principal investigator (PI). TRAINS provides participants with a 15-month experience where they engage in a hands-on, full-time undergraduate research experience at USC during the summer they enter the program and the summer they conclude the program.

MSE Summer Research Program

In June 2023, 18 Río Hondo College STEM students participated in the Mathematics, Sciences and Engineering Division (MSE) Summer Research Program (SRP), a part-time summer research experience where students engaged in a faculty-mentored research project over a two-week period. This summer program, facilitated by Chemistry Professor Teddy Kidane, provided an immersive and hands-on research experience in molecular biochemistry.





Faculty-Facing Initiatives

In summer 2023, thanks to Title V Enlace, eight STEM and eight non-STEM faculty members participated in the Certificate in College Teaching and Learning in Hispanic-Serving Institutions (CTL-HSI) program hosted by ESCALA Educational Services.

Participants experienced demonstrations of high-impact teaching/learning practices, received crucial implementation advice from practitioner-advisors and learned how to measure changes to Latinx student engagement and learning in their courses.

ESCALA Faculty Participants:

- Albert Ocon, *Humanities*
- Awndrea Lassiter, *English*
- Christopher Andrews, *English*
- Claire Koehler, *English*
- Claudia Molina, *Chemistry*
- Garima Garg, Ph.D., *Chemistry*
- Henry Leang, *Mathematics*
- Jenny Ding, Ph.D., *Engineering*
- Miguel Jimenez Bravo, *Mathematics*
- Nancy Garcia, *Mathematics*
- Sally Olivas, *English*
- Shelly Spencer, Ed.D., *Biology*
- Shirley Isaac, Ph.D., *Biology*
- Sue Park, *Sociology*
- Tiesha Stewart, Ed.D., *Child Development*
- Tammie Shaw, *Psychology*

Student Spotlights

Río Hondo College proudly recognizes its outstanding STEM students for their remarkable and extensive accomplishments and talent. These students have proven in their classwork, program involvement and internships that they are the next generation of leaders in science, engineering and innovation and they are poised to make a significant impact on the scientific community.



Nicholas Gomez

- Computer Science major
- Transferring to University of California, Davis
- Summer 2023 participant in the Research Experience for Undergraduates in Software Engineering at Carnegie Mellon University



When I returned to school in my mid-20s, all I wanted to do was get a good job and move out of my parents' house. Fortunately, my CS professors and MESA advisors showed me that I could do more with my life than just 'getting a good job.' Even if I am not able to change the world, I will know I have changed my life for the better."

David Colin

- Engineering major
- Transferring to California Polytechnic State University, Pomona
- Summer 2023 intern at Northrop Grumman Corporation in Huntsville, Ala.

Daniel Sandoval

- Engineering major
- Summer 2023 participant in the Materials Research Science and Engineering Center, Research Experience for Undergraduates Program at University of California, San Diego

Alejandro Valdez

- Computer Science major
- Summer 2023 participant in the Computer Science Research Experience for Undergraduates at Harvey Mudd College

Anthony Reynaga

- Engineering major
- Transferring to California Polytechnic State University, Pomona
- Summer 2023 participant in the Research Experience for Undergraduates Program at Florida International University in Miami, Fla., focused on Natural Hazards Engineering Research Infrastructure

Antonio Loyola

- Computer Science major
- Summer 2023 Software Development Engineer intern at Amazon.com, Inc. in Seattle, Wash.



Río Hondo College has provided me with challenging coursework that strengthened my critical thinking and supported me in gaining a general understanding of what to expect from a career in STEM. Also, as a STEM student at Río Hondo College, I felt welcomed by my fellow STEM peers due to the supportive and inclusive environment."



Jasmin Gonzalez

- Chemistry major
- 2022 participant in the TTE: Transfer-to-Excellence Summer Research program at University of California, Berkeley





Río Hondo College STEM students have embraced these disciplines with enthusiasm and determination. Their achievements have been fueled by a combination of factors, including access to quality education and advanced laboratory equipment coupled with a shift in societal attitudes toward STEM. Moreover, initiatives aimed at promoting diversity and inclusion within these fields have further bolstered the success of students. Their success not only enhances their individual futures but also paves the way for a prosperous and sustainable society as a whole.”

– Don Miller, Ph.D., *Vice President of Academic Affairs*

Thank you

Thank you for celebrating the highlights and achievements of Río Hondo College’s STEM program. We are certain that next year we will have even more accomplishments to share, including more student success stories, program updates, prestigious accolades and more which you can read about in the 2023-24 Annual State of STEM Report.



RÍO HONDO COLLEGE

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