

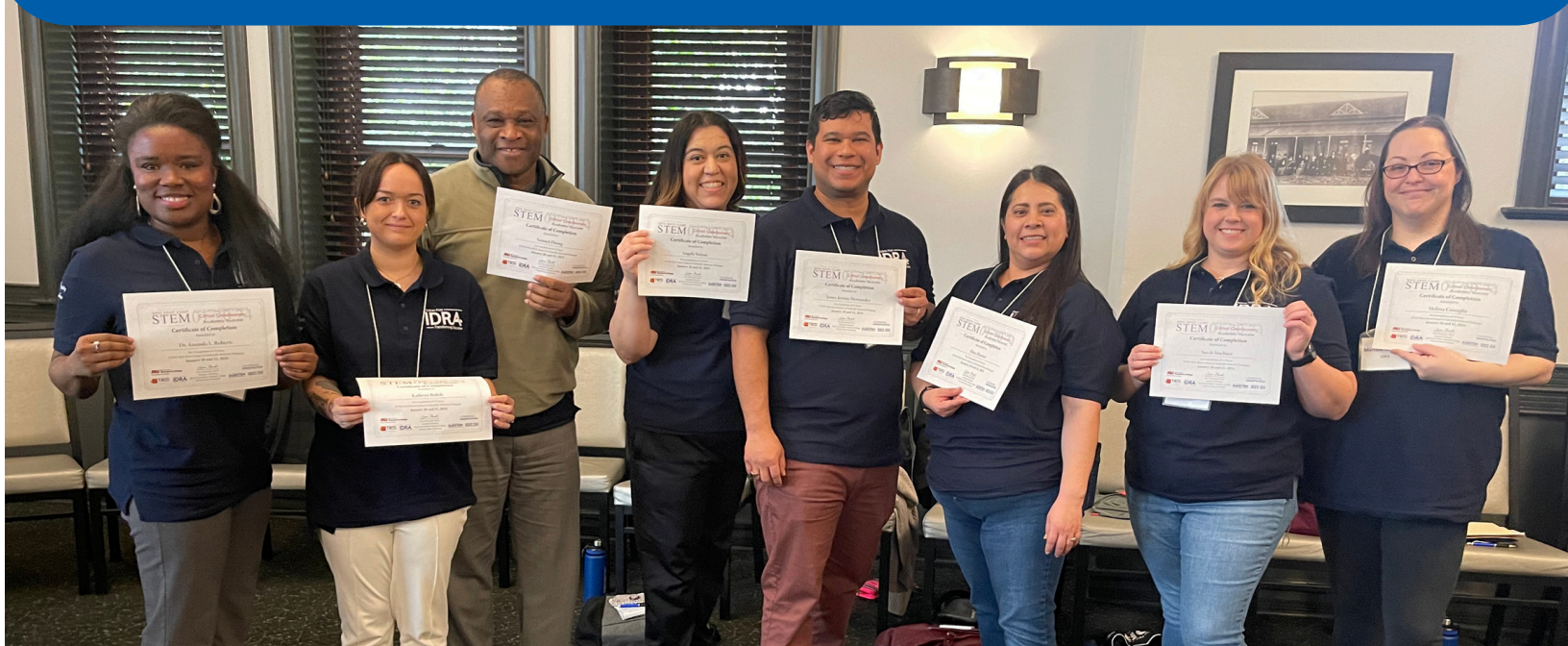


# IDRA STEM Equity Ambassadors

**San Antonio Educators Promote Diversity in STEM**  
— 2023-24 Highlights —

Author: Anavi Prakash

# First IDRA STEM Equity Ambassadors in San Antonio



Eight educators participated in the 2023-24 Alamo STEM Ecosystem cohort of STEM Equity Ambassadors. IDRA co-leads the Alamo STEM Ecosystem, a cross-sector collaboration to improve STEM learning for all students in San Antonio.

STEM Equity Ambassadors participated in hybrid fall 2023 and spring 2024 sessions, each ending in an in-person STEM Equity bootcamp, where ambassadors had the opportunity to meet other ambassadors from around the country. Nationally, 32 ambassadors participated in the program.

The hybrid sessions were primarily discussion-based, supplemented by readings and survey-based activities. Ambassadors met about monthly and focused on gender and racial equity in STEM education.

The bootcamps were hands-on, with ambassadors doing activities, such as the [Theatre of the Oppressed](#), which enables participants to rehearse potential solutions to identified problems.

Ambassadors then created individual equity action plans. In alignment with the [Ten Commitments for Equity Literacy](#), these plans outline the actions ambassadors will take in their own communities to improve equity in STEM education.

IDRA Education Associate Lizdelia Piñón, Ed.D., and IDRA Chief Technology Strategist Michelle Martínez Vega led programming for the Alamo STEM Ecosystem cohort.

A U.S. Department of Defense grant covered bootcamp travel costs. Additionally, ambassadors receive a stipend and laptop for the program.

The program was funded through the [Defense STEM Education Consortium \(DSEC\)](#), which aims to strategically address programming gaps and build skills in support of critical technology areas to enhance future technical capabilities.

The STEM Equity Ambassador program was presented by IDRA, Arizona State University Mary Lou Fulton Teachers College (ASU MLFTC), Learning Undefeated, and the Teaching Institute for Excellence in STEM (TIES).



See webpage with  
podcast interviews,  
videos & more!



## Alma Ramos, M.A., M.Ed.

Alma Ramos, M.A., M.Ed., wants to create excellence and equity in education to shape future generations. She is a middle school assistant principal and has experience as an instructional coach and science teacher. The Nuevo Laredo, Mexico native earned her master's degree in bilingual education from Texas A&M University-San Antonio. Ramos earned her master of education in school leadership from Trinity University.

### Creating a sustainable equitable STEM curriculum

Alma Ramos, M.A., M.Ed., was never encouraged to pursue STEM by her grade school teachers. Her father was the only person who encouraged her.

Now, as an educator with a specialization in STEM, Ramos wants to make sure students have access to quality STEM education, no matter who they are or who their teachers are.

Ramos said: "STEM is for everyone. It doesn't have a face, it doesn't have a gender, it doesn't have a culture."

Her equity action plan focused on creating sustainable STEM education that survives teacher turnovers.

As an associate principal, she is working with her district's science director and superintendent to create resources to support her goal.

Even though teachers come and go, the students remain, Ramos said. She emphasized that no matter their teacher, students should feel inspired to enter a STEM field beyond science classes at school.

"We want them to be more visible... not just in STEM clubs, but in career fields," Ramos said.

Ramos said she encourages teachers to be researchers and find opportunities for themselves to grow the quality of STEM education they are teaching. She said it is equally important for teachers to find opportunities that enhance their students' learning.

Ramos said a large part of her work is also looking at how current STEM opportunities can be more accessible to students. She asks questions to push her colleagues to consider ways to overcome equity barriers.

She also created a self-reflection checklist, something she looks at every week to determine if she was equitable in her words and actions. Ramos said the checklist was inspired by learning about the five faces of oppression during one of the IDRA STEM Equity Ambassador bootcamps.

The five faces of oppression, a model by political theorist Iris Young, are the five categories that any type of oppression can fall under. The faces are marginalization, powerlessness, exploitation, cultural imperialism, and violence.\*

Ramos said her goals are to ensure she is not oppressive to anyone and to make advocacy for equitable education something that comes naturally to her.

Her action plan to make everlasting STEM resources for districts is a commitment she is making to improve equity. She emphasized that issues related to equity are everyone's responsibility to solve.

Equity is an "actionable commitment to yourself and to your community and the people you were able to connect with," Ramos said.

\* Robolledo, Mauricio. (April 24, 2023). Iris Marion Young's Five Faces of Oppression. Critical Legal Thinking. <https://criticallegalthinking.com/2023/04/24/iris-marion-youngs-five-faces-of-oppression/>



## Angela Votion, M.S.

Angela Votion, M.S., wants to increase diversity in STEM education. She is a STEM education consultant. Her specialties are gifted education, instructional design and curriculum and professional development. Votion also runs educator training sessions focused on culturally relevant pedagogy, a topic she is passionate about. She earned her master of science in reading from Texas A&M University-San Antonio.

### Increasing gender equity in STEM education

For Angela Votion, M.S., equity is about creating opportunities for groups that are left out.

In STEM, gender equity is the most important to her because as a young girl, she was never given opportunities to learn STEM subjects. She said that boys, however, were given the resources to explore fields in STEM.

Votion knows that, to increase equity for girls in STEM, educators must have conversations about the topic, something she promotes in her educator training sessions.

“If we just end the conversation because it’s uncomfortable, no change is going to happen,” Votion said.

Since participating in the IDRA STEM Equity Ambassadors program, Votion said she has pushed for more uncomfortable conversations in her training sessions, especially to push back on pushback against having such conversations.

She said she was inspired by participating in the Theatre of the Oppressed during the STEM Equity bootcamps. The activity “radically” changed her thinking.

“We have to take a deeper dive on what opportunities are lacking,” she said.

She added that after incorporating elements of the Theatre of the Oppressed in her training sessions, she has seen the

impact it has on other educators. She said several educators have thanked her for going through the activity. One district coordinator plans to look for ways to increase STEM opportunities for girls in her district.

As part of her own action plan, Votion is planning STEM days for girls to give them time to explore STEM. She emphasized that these days are not meant to take opportunities away from boys but to give girls a chance to learn in a safe and judgment-free space.

For educators, Votion wants to increase the frequency of her sessions and hold one-on-one coaching for district administrators.

In her consulting work, Votion said she is only able to talk to districts about STEM equity when they are actively trying to achieve it. The districts’ focus has recently been limited to reading and math, with an emphasis on standardized test preparation.

Votion said, for math, it is also important to give students STEM learning opportunities. Such opportunities make learning more fun and encourage students to explore different fields.

“I’m a real true believer that you don’t learn from a textbook or a worksheet you learn from experiencing something,” Votion said.



## Amanda Roberts, Ph.D.

Amanda Roberts, Ph.D., aims to mentor and inspire students at all levels, from kindergarten to graduate school. She is the math academic program director at St. Philip's College Southwest Campus in San Antonio. Roberts also has experience as a U.S. Air Force research scientist, an assistant professor of chemistry, and middle school science teacher. She earned her doctorate in biomedical sciences from the University of North Texas Health Science Center.

### Inspiring and uplifting students' STEM abilities

Amanda Roberts, Ph.D., came back to teaching in July, after being a research scientist for the U.S. Air Force, which she called her dream job.

She said that, no matter what field she is working in, she always strives to be a mentor to students and excite them about STEM.

She said her switch back to teaching, having previously been a middle school science teacher, came after she met her fellow IDRA STEM Equity Ambassadors in San Antonio.

“Seeing how much passion there is in San Antonio and listening to [other educators’] challenges and the way they solve problems, that definitely was like ‘I need to get back to the school system,’” Roberts said.

Now, as an academic program director at St. Philip's College, she wants to uplift and inspire students with the work they will do in STEM, which she outlined in detail in her STEM equity action plan.

She added that her goal is to give STEM students the skills she would have benefited from while facing adversity in her path to become a scientist.

She said her advice to teachers is to see where their students are and bring their work and knowledge “to the next level.”

“You have to encourage [and] inspire, like ‘You’re doing great, but let’s do even greater,’” she said.

In July, Roberts ran a motivating and engaging with STEM activities (MESA) camp for middle and high school students.

The purpose of the program is to give students hands-on STEM experience with an emphasis on math.

Additionally, high school students will have college preparation sessions to teach them about various opportunities and resources.

Roberts said the trick to teaching students STEM is to help make them trust their abilities.

For students, “this is about breaking it down and believing in yourself,” she said.

She said the most valuable lesson she learned as a middle school teacher was that, to teach effectively, teachers should learn from their students and what helps them learn.

She emphasized that collaborating with students and colleagues is an integral part of teaching. She said connecting with other educators through social media and in programs, such as the IDRA STEM Equity Ambassadors program, helped her with this immensely.

Next, Roberts has a collaboration with elementary schools lined up to give students more opportunities to actively participate in STEM activities.



## James Hernández, Ph.D.

James Hernández, Ph.D., believes a quality education is the key to creating communities that are content, politically engaged and earn higher paying jobs. He describes himself as a lifelong community member of Edgewood ISD in San Antonio, where he went to high school and currently serves as a school board member. He is also a technology teacher in Harlandale ISD. He earned his doctorate in interdisciplinary learning and teaching from the University of Texas at San Antonio.

### Putting theoretical equity into practice

James Hernández, Ph.D., said he became an IDRA STEM Equity Ambassador to bridge the gap between equity in academia and equity in practice.

As a first-year principles of information technology (PIT) teacher, after earning his doctorate, he saw that ideas of equity do not always trickle down into practice.

Hernández added that, in his equity action plan, he prioritized equity in his classroom because he saw several students who felt like they did not belong in the world of academics.

“They felt like they were not readers, [that] they were not scientists,” he said.

To change this, Hernández brought in guest speakers and took his students on field trips to see that people who looked like them and who came from similar backgrounds existed in fields like science, medicine and engineering.

To him, education is made of an individual’s struggles, friendships and learning. His goal was to show students that what they wanted to get out of their education was possible.

“Once you learn something, then they can’t take it away from you,” Hernández said, speaking about the historic marginalization of minority groups.

He said the impact of representation was one of the main ideas that stuck with him during STEM Equity Ambassador workshops.

Hernández said his own identity as a first-generation Latino doctor helped him show his students, 98% of whom are Latino, that it was possible to go far in their education journeys if they so choose.

“Being who I am, that says more than I can [verbally], at least at first,” he said.

The second part of his action plan entailed reflecting on the materials he teaches and why he teaches them to ensure the knowledge his students are learning is relevant to their future.

He emphasized that school is not just for learning for a grade but also for learning content and skills that help students create their own paths.

As a technology teacher, he said reflection is important to keep up with technological advances that are important for students to know.

Hernández said the IDRA STEM Equity Ambassadors program helped him carve out time to focus solely on reflecting because otherwise, his days are filled with work and trying to catch his breath before doing it again.

He said finding such spaces, filled with people who understand the importance of equity, motivates him in his work as a teacher.



## Kathryn Bolish

Kathryn Bolish is passionate about inspiring students to pursue paths in Space STEM. She is a program manager for WEX Foundation, a non-profit Space STEM foundation that runs NASA-commissioned programs. Bolish leads curriculum development and implementation for two middle and high school programs. She also develops and researches lunar construction technologies for WEX Foundation's partner company, Astroport Space Technologies. A San Antonio native, Bolish earned a bachelor of science in math from the University of Texas at San Antonio.

### Expanding access to Space STEM learning communities

As a San Antonio native, Kathryn Bolish has seen how underserved her community is, especially in STEM fields, she said.

She works in Space STEM, a field that is less well-known and that she calls "tabooed." According to Bolish, many students do not feel confident in themselves to ever work in a field like Space STEM.

She seeks to change that and has begun tying students' interests to the curriculum content. She also teaches with language and ideas that are already familiar to students, she said.

The impact on students is clear, Bolish said. Attendance has increased at her 9:00 a.m. sessions on Saturday mornings because students are interested in what they are learning and are learning together.

"It's so much easier to enjoy what you're doing when you have a community of people around you who are like-minded, are supporting you and [are] helping you work toward your goals together," she said.

Bolish started modifying the curriculum after discussing the idea that the easiest solution is not always the right solution during an IDRA STEM Equity Ambassadors session.

A lightbulb went off for her when she realized that it was important to look at the nuances in problems related to equity and use them to create solutions.

"I need to stop doing what's easy for me and everyone else and start asking those complex questions with everybody [so] that the students start benefiting," Bolish said.

Now that she has seen success in the programs she already runs, Bolish wants to expand to every region of San Antonio. She emphasized that having strong STEM, especially Space STEM, programs across the city will help address the STEM education disparities she experienced growing up.

Bolish's equitable programs will reach communities that have not been reached before, whether that be neighborhoods in San Antonio or students interested in STEM fields that aren't traditionally taught.

To fund her new initiative, Bolish is trying to get grants from NASA, which funds her current programs, and from the U.S. government and other STEM organizations.

As for curriculum content, she plans to use her network of fellow STEM Equity Ambassadors to ensure she is creating resources that are on the right path for her and for her peers, who come with a variety of experiences.

"I now have the tools to go out and efficiently and effectively make a change in a lot of students' lives who might have a budding interest in Space STEM curricula," Bolish said.



## Melissa Consiglio, M.A.

Melissa Consiglio, M.S., believes the representation of diverse perspectives in STEM and science literacy are more important than ever. She is starting her 13th year of teaching. She teaches honors biology and forensic science at the high school level. She earned her master of science in teaching from the University of the Incarnate Word.

### Teaching using inclusive language and diverse perspectives

For Melissa Consiglio, M.A., one of her main goals is to teach her students the “science of reality.” She emphasizes that giving them all accessible information is crucial to their learning in the classroom and beyond.

Consiglio does this by teaching required content, as well as the history of the field. In both biology and forensic science, she teaches her students about how sex and gender and their norms are not binary in society or science.

“We’ll talk about how gender norms have changed over time, and they often don’t know about that,” she said.

Consiglio wants students to understand that female scientists and scientists of color have been held back in the past and that diversity in STEM fields is important. She teaches her students about a diverse group of scientists and avoids narratives that center “white male Christianness.”

She added that she also uses her students’ names in worksheets and various assignments to help them engage with the content.

“Using names that I’ve had and the cultures that I’ve taught makes it more normal for them to see themselves reflected in the curriculum,” she said.

These concepts were all part of Consiglio’s STEM equity action plan. She said she wanted to use the plan to expand on things she is already doing.

Another part of her action plan looked at how to make her classroom a safe space for diversity. She stressed that by demonstrating how to be respectful, she wants to ensure her students accept people different from them.

“I’m not going to say anything insensitive, at least to the best of my ability, because we do have teachers, unfortunately, that will make it an issue with students who identify differently, who dress differently,” Consiglio said.

One place she felt respected was during the IDRA STEM Equity Ambassador’s program, as the other ambassadors were supportive and like-minded. She added that the program was “revitalizing” for her as a teacher.

Consiglio said she has already used a connection from the program with fellow ambassador Amanda Roberts, Ph.D., to apply for and receive a grant to fund science resources for students.

Her next steps are to find more ways for students to get involved with science at school. She she wants to work with her college and career center to explore the best way to highlight STEM pathways.

She added that she plans to collaborate with other teachers to expand the science opportunities for students.

“I want to just ignite the love of science and curiosity in them,” Consiglio said.





## Samuel Ebong, Ph.D.

Samuel Ebong, Ph.D., wants to help students of color and students with limited means see a future in STEM. Ebong is the STEAM coordinator for Southside ISD in San Antonio. He also has experience as a science specialist, researcher and scientist. Much of his research focuses on the molecular basis of infectious diseases. Ebong earned his doctorate in life sciences from the University of Tennessee, Knoxville.

### Giving students the tools to have successful futures

The future is all about young people, according to Samuel Ebong, Ph.D. It is important to equip them with resources that will help them succeed.

Ebong said: “I want to build that inner drive in them, that capacity in the students to be strong mentally. I want the students to succeed.”

He added that he wants to expose students to all the possibilities they can choose from and not limit them to one or two, as is commonly done, an idea that was reflected in his STEM equity plan.

As a STEAM coordinator, Ebong works with teachers and district educators to give students more hands-on experiences. He said these experiences are important for students because the skills stick with them.

Ebong also runs programs after school for various skills, including gardening and 3-D printing.

His collaboration with other educators is part of his goal to help more educators understand what equity is and means for students.

He emphasized that, to be successful in increasing STEM equity, educators must be passionate about the issue and commit to work improving equity.

“This is not about you. You’re doing it for a student. Don’t use it as a photo op,” Ebong advised teachers.

Ebong said he enjoyed the IDRA STEM Equity Ambassadors program because it enabled him to collaborate with like-minded educators from a diverse range of backgrounds and with a diverse range of career paths.

He said the activity that resonated with him was the Theatre of the Oppressed. He said he was surprised by how difficult it was to articulate problems during the activity, even though he had experienced many of them in real life.

Ebong, who calls himself a “minority in every face of the word,” also uses his identity as an opportunity to show students that people like him and them can achieve big things, such as higher education and beyond.

He said he wants them to see him as a role model who, after achieving his goals in other fields, is giving back to the community. His goal is for students to do the same.

Ebong said: “The main client here are the students. Whatever we do has to be to improve the students. Don’t let [inequity] be the reason students don’t perform well.”



## Sarah Stoebner

Sarah Stoebner is passionate about helping minority groups pursue the paths they want. This stems from her experience working in several male-dominated fields. Stoebner is a physics teacher in San Antonio. She also has experience as a math teacher, telescope operator, and Black Hawk Helicopter mechanic for the Hawaii Army National Guard. Originally from Sioux Falls, South Dakota, Stoebner earned her bachelor of science in astronomy from the University of Hawai'i at Hilo.

### Learning from students' identities and education experiences

Prior to the IDRA STEM Equity Ambassadors program, Sarah Stoebner said she felt uncomfortable spending class time on conversations about students' cultures and experiences.

"I didn't want to step on any toes, but I feel more comfortable now engaging in those conversations," she said.

Stoebner said that talking with other teachers about equity and representation during the program made her feel at ease when such conversations arise in her classroom.

She added that she leaves space for discussion at the beginning of class periods before shifting students' attention to physics. Not only does she participate in these conversations, but she also allows students to talk to each other about their lives, which has also been beneficial.

"I let those [conversations] happen often, and it made them feel more comfortable," she said.

Stoebner strongly believes that everyone should feel welcome and confident in their abilities in her classroom. She said this was part of the reason she applied to become an IDRA STEM Equity Ambassador.

Her equity action plan focused on using student perspectives to inform her work to improve representation in her classroom.

She emphasized that representation goes beyond conversations and is also about physical things.

Her room decor currently includes a wall with influential women in STEM. Stoebner said she plans to expand her collection to include scientists of color and to teach about them as warmups at the beginning of class.

Stoebner is working on a set of surveys to give her students at the beginning and end of the school year. At the beginning of the year, the survey will gauge students' initial comfort level in class. Her end-of-year survey will focus on areas of improvement representation-wise.

Stoebner also plans to use her network from the STEM Equity Ambassadors program to bring in speakers to help her students understand what working in science entails and that they can do it too.

"These scientists were able to achieve what they wanted to achieve, and [students] need to be able to see that," Stoebner said.



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