

ASU program celebrates 40 years of supporting high school STEM students

The Joaquin Bustoz Math-Science Honors Program combines rigorous academics with a deep sense of community and belonging

By Rhonda Olson, ASU News
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Hailing from Kayenta, Arizona, Chermiqua Tsosie grew up in Phoenix and spent summers going back home to her small town in the Navajo Nation, which sparked a deep interest to someday return to help her community — perhaps as a physician.

But as a high school student, she had self-doubt that maybe she wasn't smart enough, or good enough, to be a physician.

"My high school self was petrified. I was so scared of the MCAT and eventually having to take an exam that's so long, or to take organic chemistry; I can't do that — that's what smart people do," Tsosie said.

That slowly started to change in summer 2019, after her sophomore year at Camelback High School, when she joined the Joaquin Bustoz Math-Science Honors Program at Arizona State University.

As the students sat in one of the small gyms at the Sun Devil Fitness Complex, program manager Cynthia Barragan Romero began orientation by sharing they had been selected from over 700 high school applicants and were "the cream of the crop."

And though Tsosie said her first summer was still spent fighting feelings of imposter syndrome, she was on a path toward achieving what she thought wasn't possible.

The [Joaquin Bustoz Math-Science Honors Program](#) was launched in 1985. It is a six-week residential mathematics summer program where motivated high school students take a college-level math course for university credit, at no cost to them.

Students participate in success sessions that address both the academic and social challenges of STEM — science, technology, engineering and math — while providing valuable guidance on college admissions. Staff provide tutoring and mentoring to support students in their transition to university life, combining rigorous academics with a deep sense of community and belonging.

The program celebrated its 40th anniversary this year. More than 120 attendees, spanning the four decades, reminisced and shared testimonies of how the program changed the trajectory of their lives during a festive dinner and gala on Oct. 4.

The Joaquin Bustoz Math-Science Honors Program was designed to help those who were first in their family to attend college, often from low-income neighborhoods or rural towns. Over 3,200 students have completed the program. Since 2005, an impressive 99% of program participants have attended college, with 73% earning a STEM degree.

"We are so proud to celebrate the Joaquin Bustoz Math-Science Honors Program's 40th anniversary. The program's commitment to creating opportunities for talented students from all walks of life perfectly aligns with the ASU Charter," said Executive Vice President and University Provost [Nancy Gonzales](#). "For four decades, you have positively impacted thousands of families and strengthened communities, leaving an inspiring legacy that we are honored to support. Here's to your continued success."

The summer program was the brainchild of Joaquin Bustoz Jr., who wanted to increase the number of PhD students in mathematics. He launched what was originally called the Math-Science Honors Program in 1985 and led the program until 2003, when he died from injuries related to an automobile accident.

Joaquin Bustoz Jr.'s youngest son, David, shared memories of his father at the gala. Born in 1939, his father was one of five siblings born to Joaquin Bustoz Sr. and wife Ramona.

"My dad always emphasized just how poor his family was — 'really poor,' he'd say. He used to joke that the reason he didn't have a middle name was because his parents were too poor to afford one. His parents initially worked as farm laborers but later found jobs at a rural school, as a janitor and a lunch lady," David Bustoz said.

"In 1957, two major events shaped my dad's life. First, the launch of Sputnik triggered a national focus on STEM education, creating opportunities for students — especially those like my dad — to pursue mathematics as part of the Space Race and Cold War efforts.

"The second event was more personal. My dad was expelled from Tempe High School for refusing to say the Pledge of Allegiance. This was his protest against the systemic inequality in American society and the racism he experienced in Tempe, a town where Mexican Americans were only allowed to swim in the public pool on Thursdays, just before it was cleaned, and where African Americans weren't allowed to swim at all. Tempe was technically a 'sundown' town.

"My father believed that the circumstances of a child's birth should not be the determining factor in that child's future success, and through his own success and position he tried to manifest the idea."

When Trachette Jackson joined the Math-Science Honors Program as a high school junior back in 1989, she vividly remembers her first time meeting Bustoz Jr.

"I was a cocky 15-year-old kid, and I distinctly recall sitting in the cafeteria of Palo Verde East, one of the ASU dorms, on the first day of the summer program, waiting to receive my score on the math placement exam. When I learned that I scored a 98%, I marched right up to a man in Levi's and Birkenstocks and asked if anyone had earned 100%.

"He looked down at me and said, 'Yes, Miss Jackson, two or three students received a perfect score. But they all just took calculus during their senior year of high school, and I understand that you still have one year of high school left — and that you haven't yet taken a calculus course.'

"I was stunned that he knew my name, because I had no idea who I was speaking to. What I also couldn't have predicted was the profound impact he would go on to have on my life. That's how I first met and came to know Joaquin Bustoz — the person to whom I owe much of my mathematical career," Jackson said.

Jackson currently works as the associate vice president for research-strategic partnerships and inclusive excellence and as a professor of mathematics at the University of Michigan.

[Cynthia Barragan Romero](#) grew up in Yuma and as a teenager couldn't wait to leave. She attended the Joaquin Bustoz program as a student in 1993 and 1994, and earned a mathematics degree from ASU in 1998. She returned to the summer program to work as a staff tutor and success coach, as many alumni do. One day she told Bustoz that he should hire her to recruit more students to the program — and he did. She started in 2000 and has been leading the program for the past 25 years.

She understands the importance of students having tutors that look like them. Nearly 60% of summer staff are alumni that return to help the next cohort of students.

"There would be a 16-year-old kid from Yuma and, oh my gosh, I had been a 16-year-old kid from Yuma! Being able to see myself in them and knowing I needed help them the same way somebody helped me. That's something that hasn't changed in all these years," Barragan Romero said.

"We push the kids as far as they can go academically because we're here to catch them, we're here to help them. That's been my favorite thing," she said. "Talking to the parents afterward and they say, 'I don't know what you guys did but this isn't the same kid I had six weeks ago.' Their confidence level just shot up. They're so excited about coming to college."

Savion Smith was raised in Phoenix by a single mother who was the first in her family to attend college. Smith first attended the program in the summer of 2007. There were times in his education when he felt singled out — sometimes positively, as the "smart Black guy," but other times with suspicion or doubt.

"I remember a physics test where I was accused of cheating and received a 57% on what I knew was solid work. I had the confidence to challenge the grade. The professor did ask me to redo every question on the blackboard, which I did. He revised my grade to a 90%," Smith said. "Experiences like that can weigh heavily on self-esteem and even push people away from math and science altogether.

"The JBMSHP provided a supportive community and a place of belonging. Students have meals covered, strong academic support and a community that believes in them. That environment allows students to shine and focus solely on their abilities. Once a student knows they can survive

the academic rigor of JBMSHP, they know they can thrive anywhere.”

Smith went on to complete a Bachelor of Science in mathematics at ASU, and a Doctor of Medicine, MD, at the University of Arizona College of Medicine. He is currently the chief fellow in child psychiatry at the Yale School of Medicine’s Child Study Center.

The rigorous yet supportive math program helped Tsosie from Kayenta to overcome the feelings that she didn’t belong.

“I kept reminding myself, maybe you stayed up until 12 a.m. doing derivatives but you still got up the next morning to continue — and you ended the program with high grades. The program equipped me with the time management skills and personal academic resiliency to keep pushing,” she said.

She is currently a clinical research assistant with the Indigenous health unit of Children's Hospital of Philadelphia. She recently completed the MCAT and hopes to be attending medical school in fall 2026.

Tsosie praised the efforts of program manager Barragan Romero and coordinator [Ciera Duran](#) in making the program so successful.

“They get you to that next level, and in a way that is so genuine. Having someone who really believes in you — that gives you the strength to continue.”

“Cindy and Ciera are the soul, the heart and the muscle of JBMSHP,” said [Fabio Milner](#), professor of mathematics and codirector of the [Simon A. Levin Mathematical, Computational and Modeling Sciences Center](#) in the [School of Mathematical and Statistical Sciences](#), who honored the two at the 40th celebration. “This dynamic duo has led the program through many transitions and kept Dr. Bustoz’ vision going strong. Their dedication is the reason for the program’s long-running success, and I am proud and thankful for working with them year after year.”

“The program is successful because it creates an environment where students can tackle hard subjects alongside people who share similar experiences and understand their journey,” Jackson said. “That sense of belonging is powerful; it transforms rigorous academic challenges into opportunities to grow with the support of peers who become lifelong friends. JBMSHP does so much more than teach mathematics — it nurtures confidence, perseverance and the belief that you belong in the discipline, which is why its impact has been so enduring and so successful.”

This story originally appeared on [ASU News](#).

Main image



ASU photographer David Goodwater takes a photo of Joaquin Bustoz Math-Science Honors Program alumni at the 40th anniversary celebration on Oct. 4. Photo by Rhonda Olson

Text image(s)



Chermiqua Tsosie as a high school junior, when she attended JBMSHP in summer 2019.



Joaquin Bustoz Jr. in his office at ASU's mathematics department in the 1960s. Courtesy photo



David Bustoz shares memories of his father, Joaquin Bustoz Jr., at the 40th anniversary celebration of the program Bustoz Jr. founded. Photo by Rhonda Olson



Trachette Jackson (third from left) and friends ride a bus in Tempe during summer 1989, while part of what was then known as the Math-Science Honors Program at ASU. Courtesy photo



Savion Smith (far left, gold shirt) with the 2008 cohort. Courtesy photo



Cindy Barragan Romero (center) and Ciera Duran (left) were honored for their many years of service to the Joaquin Bustoz Math-Science Honors Program during the 40th anniversary celebration. Photo by Rhonda Olson