

LUMINA FOUNDATION

# FOCUS™

Spring 2011

## Un nuevo día

As Latino population grows,  
so must college attainment







From Cuba to college: Page 6



Slow start, big finish: Page 13



Math is her mission: Page 20

**On the cover:** Javier Francisco, associate director of enrollment management at Georgia College, is a passionate advocate for Latino student success — and an eager mentor to many young Latinos. “It’s not just recruiting for me,” Francisco says. “It’s about showing students that they can dream bigger and that college will show them how.”

## PRESIDENT’S MESSAGE

**R**ecently released figures from U.S. Census Bureau make one point with stunning clarity: The face of America is changing. And rapidly.

Consider the numbers: The U.S. population grew by about 9 percent between 2000 and 2010, rising from 281 million to nearly 309 million. During that decade, the number of Latino residents increased by 43 percent — nearly ten times the growth rate of the nation’s non-Latino population. Today, Latinos make up almost one-sixth of the U.S. population. By 2050, experts say, one in four Americans will be Latino.

This growing subpopulation is marked by its youth. According to the most recent figures, the median age of Latinos is 27; that’s 10 years younger than the median age for the population as a whole and 14 years younger than that of white Americans.

Something else has changed in the past decade as well: The nation’s need for college-educated citizens has increased dramatically. Experts agree that increasing the number of Americans with postsecondary degrees and credentials is vital for short-term economic recovery and key to sustained economic growth.

That’s why the Big Goal for higher education — or “Goal 2025,” as we call it — is increasingly recognized as a national imperative. Reaching Goal 2025 — in other words, ensuring that 60 percent of Americans have earned high-quality postsecondary degrees or credentials by 2025 — is the only way we can position ourselves for success in the complex global economy.

Those two huge, concurrent changes — a rapidly growing Latino population and the critical need for a more educated populace — form the jumping-off point for this issue of *Lumina Foundation Focus* magazine.

The current *Focus* takes a detailed look at this historic demographic shift and shows how it affects college-going and college success among Latino students throughout the nation. For example, in this issue, you’ll read about:

- Efforts to assist Latino students on several campuses in Georgia, a state that serves as a demographic microcosm of the nation as a whole, having nearly doubled its Latino population since 2000.
- A cooperative commitment that enables two Hispanic-Serving Institutions in west Texas (El Paso Community College and the University of Texas at El Paso [UTEP]) to truly *serve* their Latino students.
- The concerted push by several colleges and universities to increase the number of Latino students who graduate in the crucial STEM fields (science, technology, engineering and mathematics).

These stories don’t stop at the institutional level, however. They also bring you face to face with a number of impressive individuals — first-generation students who, with the help of dedicated educators, are blazing their own trails to college success. For instance, you’ll meet:

- Javier Becerra, who came to this country aboard a wooden raft as a 4-year-old Cuban refugee and is now a pre-med biology major at a college in central Georgia.
- Marisela Rizo, a 46-year-old single mother in El Paso whose determination has helped her reach her goal of becoming a nurse.
- Cristian Bueno, who came from Mexico to California at age 13 and began her schooling in English Language Learner (ELL) classes. Eight years later, she’s a college graduate who plans to be a teacher so she can “change someone else’s life” the way hers was changed.

I also urge you to visit our website, [www.luminafoundation.org](http://www.luminafoundation.org), where *Focus* brings more compelling stories to life. The Web-based edition offers a wealth of extra content, including interactive demographic maps from the Pew Hispanic Center, a photo slideshow featuring Javier Becerra, and a short video of Cari Morales, a 20-year-old junior at Indiana University who’s beating the odds as a first-generation student.

These stories — both on the Web and on the following pages — will inform and inspire you. Even more important, I hope they will help focus all of us on a task that is at once a serious challenge and a priceless opportunity: making college attainment a reality for many more Latino students.

I encourage you to join Lumina in seizing that opportunity, not only to enhance the lives of those students, but to brighten the future for all Americans.

Jamie P. Merisotis  
President and CEO  
Lumina Foundation for Education



# A new translation for

# COLLEGE

Éxito, not exodus, must become the norm for Latino students

*By Patricia L. Brennan*

José Ibarra, 19, spent his summers working alongside his parents and grandmother in a poultry-processing plant in Dalton, Ga. It was “horrendous, back-breaking work,” Ibarra says, but he needed the money to pay for college. Ibarra is now a freshman at Georgia College in Milledgeville. When Latino high school students visit GC’s campus, he takes it upon himself to show them the ropes.

“I’ve struggled getting to college,” Ibarra says. “If I can make a difference for another Latino, then I want to do that. Inspiration is my goal.”

Maria Escobedo, 56, is a grandmother-turned-student at the University of Texas at El Paso. A transfer scholarship program is helping her achieve a lifelong dream of becoming a teacher.

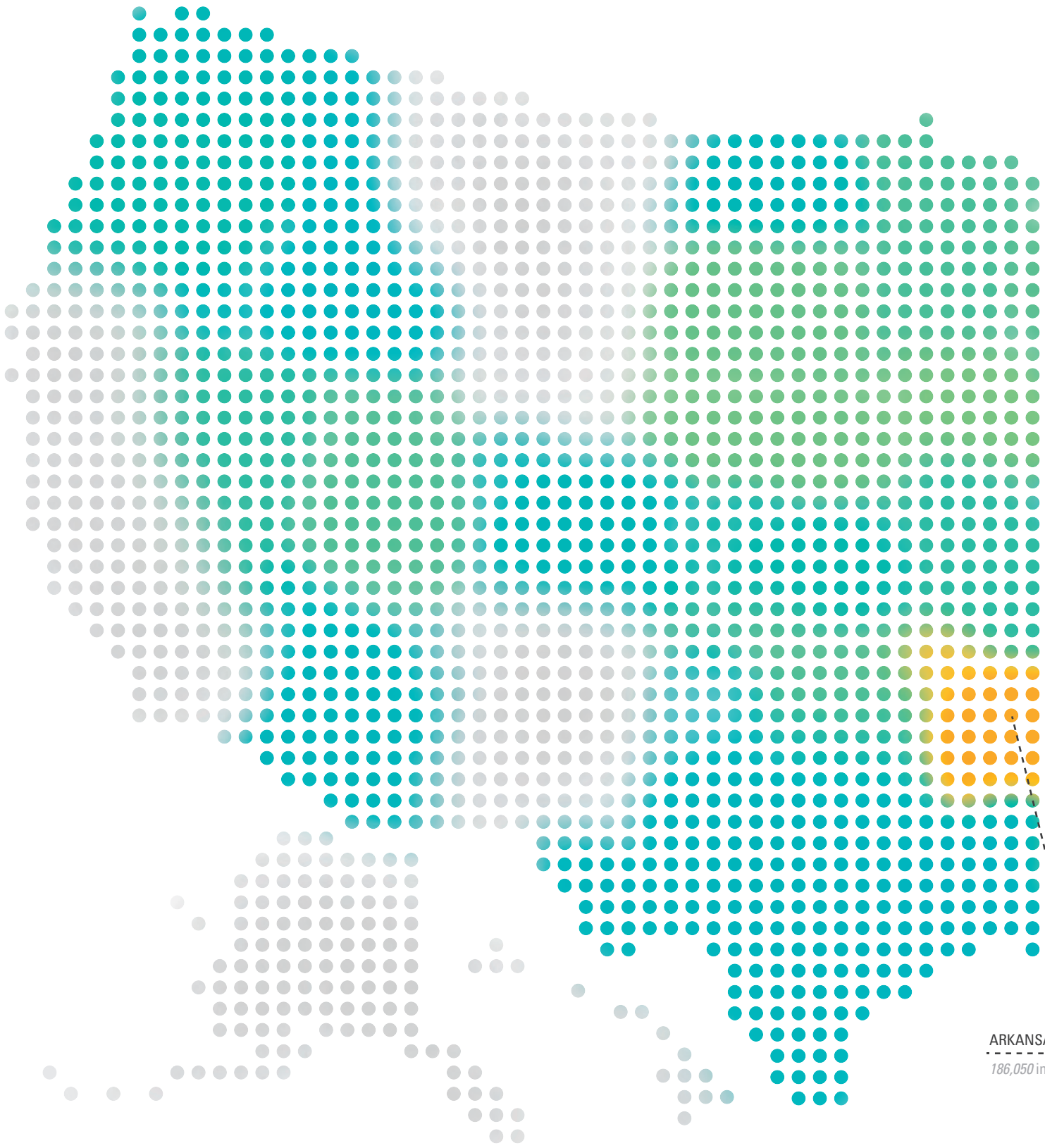
Claudia Rizo Davila, now 36, grew up poor, on welfare and living in a public housing complex rife with violence, gangs and drug dealers. Now a fifth-grade teacher, Davila says a mentoring effort at a Texas university gave her family the tools and inspiration they needed to build a better life.

*Continued on Page 4*

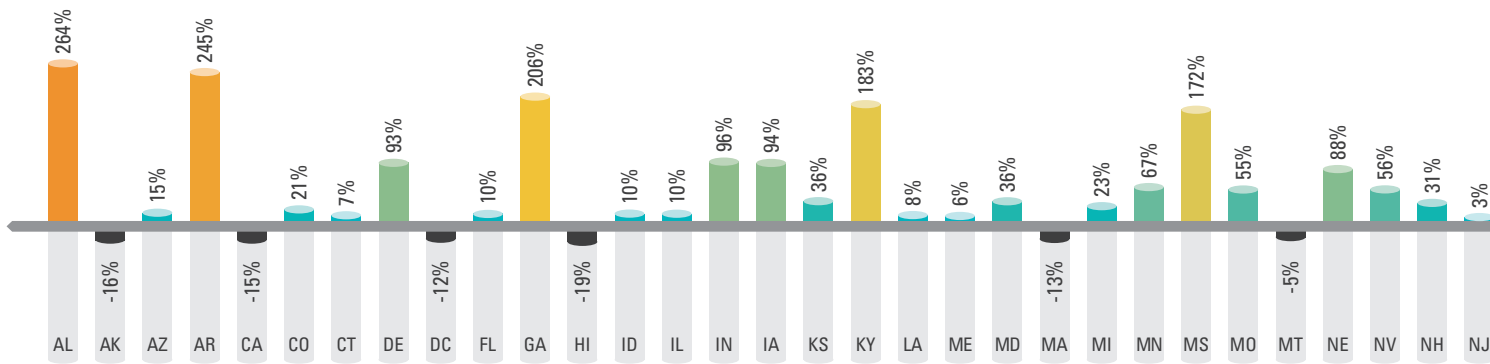


# SUCCESS





ARKANSAS  
186,050 in



# Demographers saw a wave, but got a flood

Predictions are always tricky, even when made by experienced experts backed by decades of data — and nothing demonstrates that fact more clearly than recent efforts to predict the growth of the nation's Hispanic population.

As far back as the 1980s, demographers knew the nation's Latino population was poised for tremendous growth. In 1996, experts at the U.S. Census Bureau sought to predict this growth, and to do so in every state. Starting with data from the 1990 Census and factoring in the rates of growth they noted in subsequent years, the experts made population projections for several "out years," ending in 2025.\*

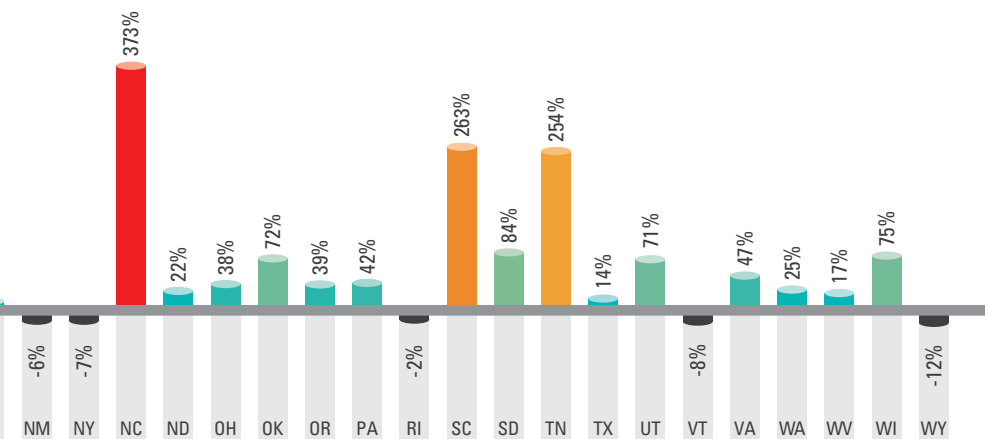
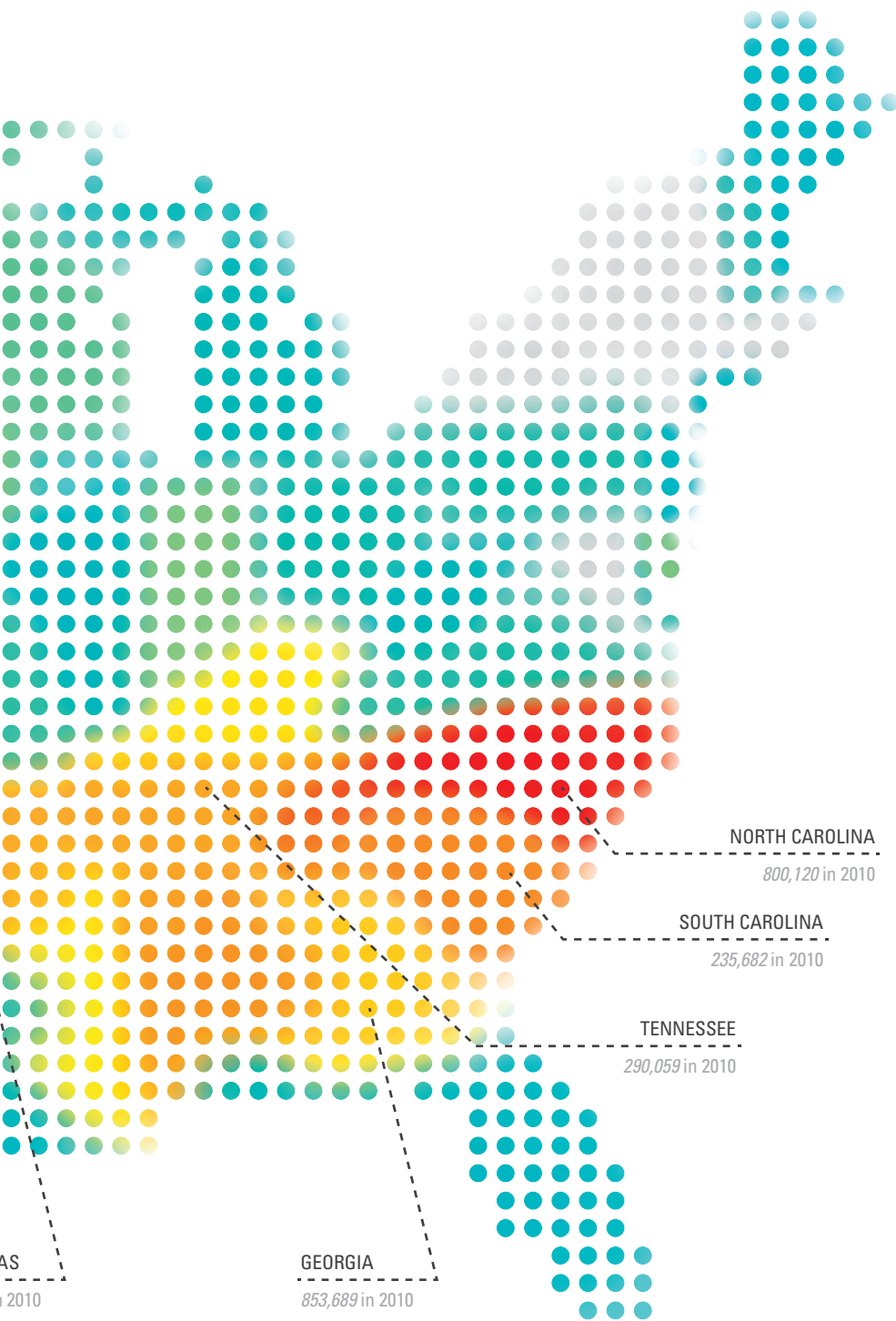
Typically, a steady upward climb in the number of Latino residents was projected. For instance, in Georgia, the number was expected to rise from 150,000 in 1995...to 189,000 in 2000...to 226,000 in 2005...to 279,000 in 2015...to 346,000 in 2025.

Suffice it to say, steady growth did not occur; instead, the upward climb was steep — in some cases, dizzyingly so. Again, by 2000, Georgia's Latino population had already surpassed 435,000; and today, it's nearly 854,000. And as the accompanying map illustrates, what's happening in Georgia, though pronounced, is by no means an aberration.

In fact, the 2010 Latino populations in most states have already exceeded the totals that Census Bureau officials projected for 2015. In only 11 states did the actual 2010 figures fail to surpass the 2015 projections.

In particular, demographic reality overwhelmed expectations in the Southeast. In that region, most states have experienced a surge in Latino residents that has far outstripped the 2015 projections — often by more than 200 percent.

\* Source: "Population Projections for States by Age, Sex, Race, and Hispanic Origin: 1995 to 2025." U.S. Census Bureau, October 1996. Retrieved from: [www.goo.gl/Edxjz](http://www.goo.gl/Edxjz)



Baseline represents Census Bureau's projected total for state's Latino population in 2015. Vertical bars show the variation from these projections as of 2010.

Continued from Page 2

Their higher education paths may be different, but Ibarra, Escobedo and Davila have something in common. They are changing the course of their future through hard work, determination, and an unwavering belief in the power of postsecondary education. They see that college can create a world of new opportunity — for them, for their families, and for legions of Latino students who will follow in their footsteps.

And make no mistake: The number of Hispanic students is huge and growing.

Figures from the 2010 Census show that, at 50.5 million, Latinos are the nation's largest minority group. One in six Americans — nearly one in four (23 percent) under age 18 — is now Hispanic. Latinos are also the nation's fastest-growing population group. Their numbers increased by 43 percent between 2000 and 2010 — a growth rate so rapid that the increase represents 56 percent of total U.S. population growth during that decade.

This explosive growth, especially in the younger age groups, came as something of a surprise to the experts. Though the Census Bureau projected significant growth based on 1990 figures, no one seems to have predicted the full extent of the demographic shift. This is espe-

cially true in the Southeast, where Latino populations in several states have already grown to levels *three or four times* what was predicted for the year 2015. (See map titled "Demographers saw a wave, but got a flood.")

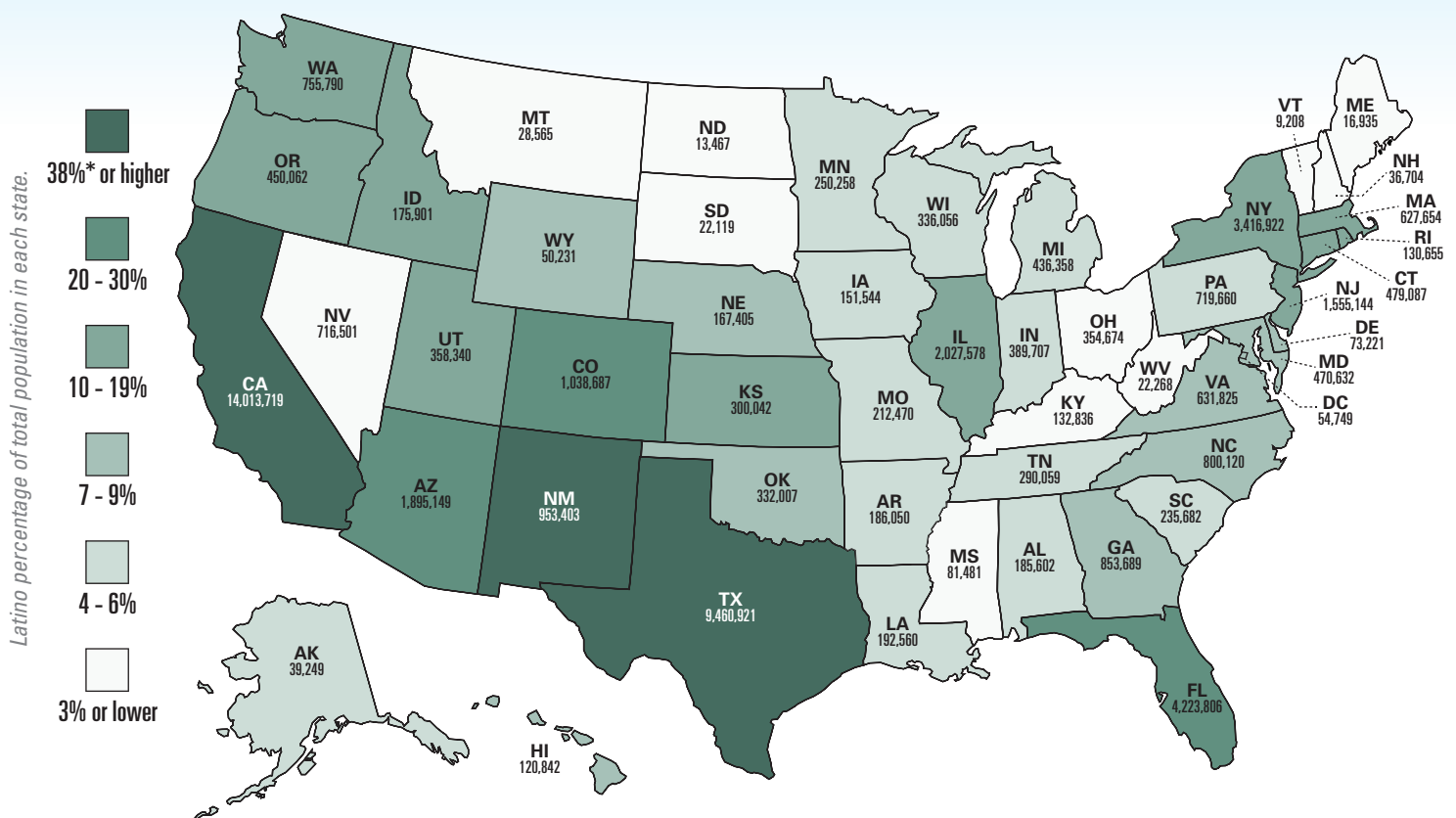
What's more, demographers say the surge has just begun. The Census Bureau predicts that the number of Latino residents will double by 2050. By then, experts say, the nation's Latino population will exceed 102 million, and one in four Americans, 24.4 percent of the population, will be of Hispanic origin. (See bar chart titled "Predicting the next wave.")

Generalizations can be misleading, especially when applied to a diverse group that includes people of all ages and both genders — individuals whose cultural roots extend in many directions, from Mexico to Puerto Rico to Cuba to Central and South America. Still, at least two generalizations about Latinos are unassailably accurate:

First, as a huge and rapidly growing segment of the U.S. population, Latinos represent great potential — a deep well of talent that is vital to the nation's future. Second, most of that talent is not being tapped, largely because Latinos' educational potential is not being fully realized.

For decades, Latino students have succeeded in college

## Distribution and density of Latino population in 2010



Totals and percentages extracted from files released by the U.S. Census Bureau in February and March of 2011.

Retrieved from: [www.goo.gl/6sKOS](http://www.goo.gl/6sKOS)

\*No state had a Latino population density between 30 percent and 38 percent.



at much lower rates than have their non-Hispanic peers. According to a 2010 report from the Education Trust, 13 percent of Latinos 25 years and older hold bachelor's degrees, compared with 39 percent of whites and 21 percent of blacks.

Meanwhile, policymakers, economists and labor experts are calling loudly for huge increases in postsecondary attainment. Unless millions more Americans earn high-quality degrees and credentials, they say, the United States will lose its ability to compete in the complex global economy. That's why more and more experts are embracing ambitious college-completion goals, many of them calling for 60 percent of Americans to hold high-quality degrees or credentials by 2025.

With current two-year completion rates hovering near 40 percent, the challenge is clear. And, because Latinos are the nation's youngest and fastest-growing population, this group of Americans will be key in meeting that challenge, says Excelencia in Education, a nonprofit group that works to improve college access and success among Latinos.

In March 2011, Excelencia unveiled a national policy road map outlining what it believes states, communities and postsecondary institutions must do to increase college access and success among Latinos.

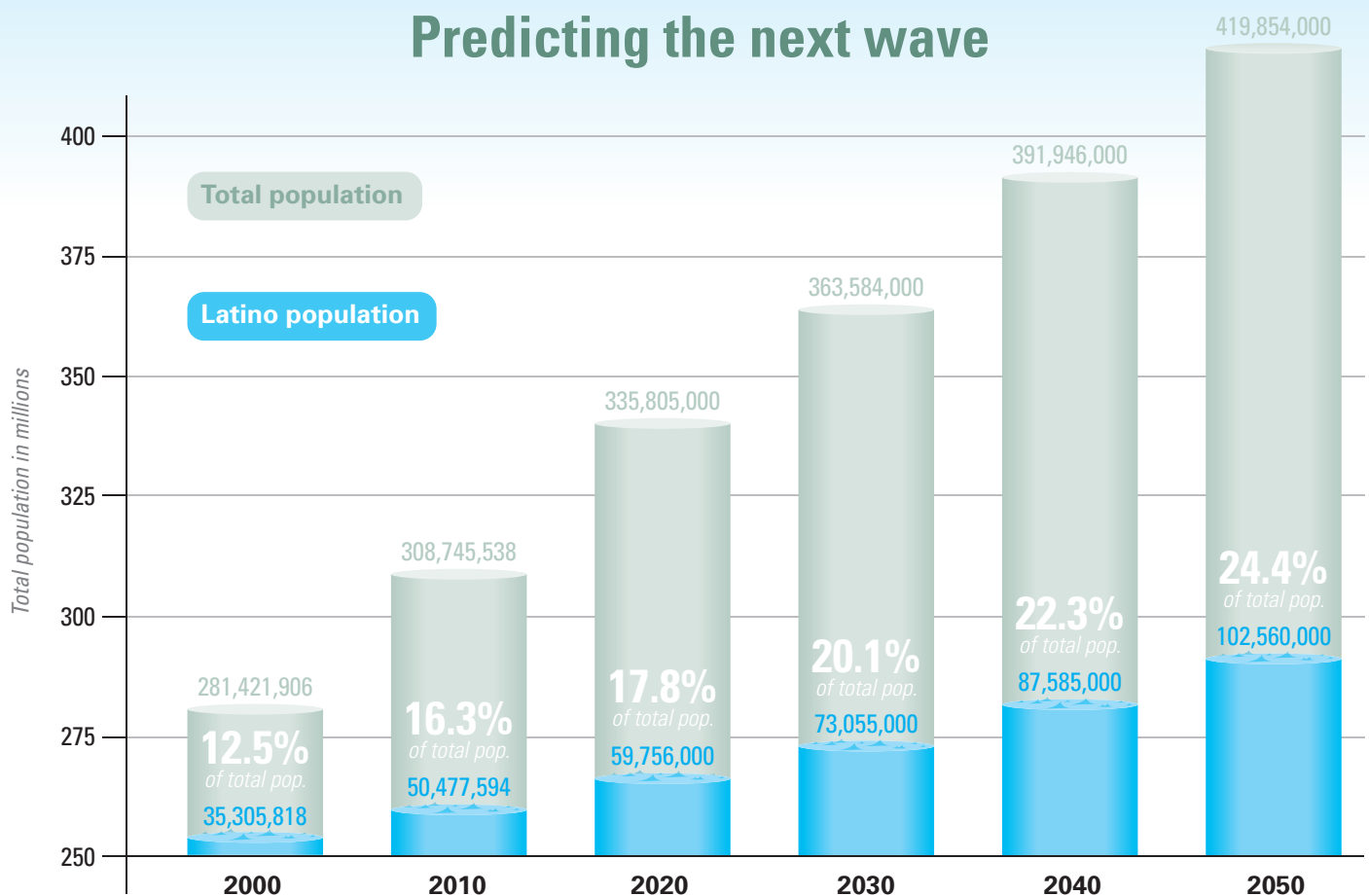
Moving the needle on Latino degree completion will require "intentionality" by policymakers and higher education officials, says Deborah Santiago, Excelencia's co-founder and vice president of policy and research. She insists these leaders must help paint a clearer picture of what it means to truly "serve" Latino students.

"Enrolling and serving Latinos are two very different things," Santiago says. "Enrollment goes along with access, (but) serving Latino students means putting into place the kinds of supports that promote persistence and degree completion."

Frank Alvarez, president of the Hispanic Scholarship Fund, says those supports include targeted recruitment and outreach efforts, policy reforms, scholarships, collaborative partnerships with the business community, stronger relationships between community colleges and four-year institutions, and efforts that more fully engage Latino parents in the college-going process.

"We think we can move the Latino finish line by focusing on the student and the family," Alvarez says. "You put a degree in one household, and the rest of the family follows. In two generations, we believe we'll move the finish line — which is now high school for Latinos — to college."

## Predicting the next wave



**Data for 2000 and 2010:** U.S. Census Bureau, "Overview of Race and Hispanic Origin: 2010," 2010 Census Brief, issued March 2011, p. 4.  
**Projections for 2020 and beyond:** U.S. Census Bureau, 2004, "U.S. Interim Projections by Age, Sex, Race, and Hispanic Origin."  
 Retrieved from: [www.gov.gl/ee6zV](http://www.gov.gl/ee6zV)

# Georgia colleges embrace the challenge

In August 1994, the Cuban refugee crisis had reached a peak as thousands of rafters, or *balseros*, attempted to sail 90 miles from Cuba to U.S. soil. Four-year-old Javier Becerra was among those who risked their lives for freedom that summer. He joined his father, mother and 20 others aboard a makeshift raft — a 20-by-20-foot wooden platform mounted atop eight 50-gallon barrels.

Sick, scared and exhausted, Becerra and his fellow *balseros* spent hours afloat in shark-infested waters before being rescued by the U.S. Coast Guard. For the next eight months, he and his family were detained at the U.S. Navy base in Guantánamo, Cuba, living in tents behind barbed-wire fences.

Eventually, the Becerras were granted asylum and flown to Miami. Shortly thereafter, Becerra's father traveled alone to Atlanta, living in his car and working two or three jobs for several months until he could rent a home and move the rest of the family to Georgia.

Javier Becerra, now 21, remembers that quest for freedom as a "defining moment" in his young life — one that serves as a constant reminder of what it means to persevere and believe in a dream.

For Becerra, the dream was college.

"I am where I am today because my father and my mother gave up everything to make sure I had opportunities they never did," Becerra says. Becerra found those opportunities at Georgia College, where he is now a pre-med biology major.

In some ways, Georgia is a demographic microcosm of what's happening nationally with Latino residents. The state's Hispanic population nearly doubled in the past decade, growing from 435,000 in 2000 (5.3 percent of the total population) to nearly 854,000 in 2010 (8.8 percent).

The Latino presence in higher education mirrors those statewide trends. Latinos made up 1.6 percent of enrollment at Georgia's public colleges and universities in 1994. By 2010, the percentage had increased to 4.7 percent — about 14,600 students out of the state's total enrollment of 311,000, according to data from the Georgia Board of Regents.

For example, Latino enrollment has nearly doubled since 2006 at Armstrong Atlantic State University (AASU) in Savannah. In fall 2010, 5.2 percent of AASU's nearly

7,700 students were Latino. At Georgia College in Milledgeville, Latinos represent 4 percent of the 6,000 students. Last fall's incoming freshman class at Agnes Scott College — a private, liberal arts women's college with 800 students in Decatur — was 7.4 percent Latino.

The figures — and projections from the Western Interstate Commission for Higher Education showing that Latinos will comprise 24 percent of Georgia's high school graduates by 2022 — are prompting postsecondary institutions in the state to embrace creative and strategic approaches to better serve Latinos.

In fact, at many Georgia institutions, the question is no longer *whether* Latino students will succeed; rather, it's "What can we do to make sure they do?" At these schools, the motto is *Estamos aquí para usted*

— "We are here for you" — and it defines the proactive approach being taken to help more Latinos enter and succeed in college.

At Georgia College, the emphasis is on recruitment and retention. The university offers Latino students targeted tutoring programs, mentorships and advising sessions. A Latino Student Organization holds year-round activities to enhance the college experience. And, like many Georgia colleges and universities, Georgia College offers financial assistance to Latinos through the Goizueta Foundation Scholarship.

Javier Francisco, associate director of enrollment management at Georgia College, is a central figure in the institution's efforts to serve Latinos. More than a recruiter, Francisco is a role model, coach and advocate. As the oldest of six siblings and the first in his family to attend college, Francisco is a living example — even an inspiration — to many of the Latino students he recruits and mentors at Georgia College.

"My story is typical," Francisco says. "My family came (from Mexico) to America for a better life. We lived in an area of Los Angeles known for gangs. One of my brothers was killed by a gang. Another is in prison. It could have been me. I was determined to break the 'cholo' lifestyle."

In high school, Francisco says he dreamed of going to the University of California-Berkeley. He almost abandoned that dream after a guidance counselor told him he "didn't have what it takes to get in." The remark made an impact.



**Javier Francisco grew up in a gang-plagued neighborhood of Los Angeles but rejected "the 'cholo' lifestyle." His decision to attend UC-Berkeley shaped his life, and now he's helping shape the lives of other young Latinos at Georgia College.**

Javier Becerra (center) talks with Camilo Baez (left) and Joseph Coleman, fellow members of the Georgia College chapter of Lambda Sigma Upsilon Latino Fraternity, which Becerra helped establish. Becerra — who came to America as a 4-year-old Cuban refugee and is now a 21-year-old pre-medical student — is focused on “empowering other Latinos.”



"I believed her. I convinced myself I wasn't worthy," Francisco recalls. After talking with a group of Latino mentors, Francisco changed his mind — and his future. He applied to UC-Berkeley and was accepted.

Francisco is now paying it forward, one student at a time, by inspiring young Latinos to pursue their college dreams. "It's not just recruiting for me," he says. "It's about showing students that they can dream bigger and that college will show them how."

Nineteen-year-old freshman Isabel Barajas, a single mom, is among many GC students who are living the dream thanks, in part, to Francisco. (See story on Page 11.)

"I remember when I was thinking about going to Georgia College," recalls Barajas. "My mother, like a lot of Latino parents, was scared for me. She didn't want me driving three hours away from home. Not only was I leaving, but I was taking her grandson, too. Javier Francisco reached out and made sure she understood that everything would be OK and that I'd be taken care of."

Like Francisco, Eric Cuevas, a recruiter at Georgia Perimeter College (GPC), relies on his experiences as a first-generation college graduate to raise the aspirations of Latino students and families.

"I meet a lot of middle and high school graduates," Cuevas says. "The No. 1 question I get is for information about cosmetology and (air conditioning) tech programs. There's nothing wrong with those fields, but I rarely hear a Hispanic kid asking about our engineering or biology programs. It's this mindset we need to change. If you've always been fed McDonalds, you don't know to ask for filet mignon."

Georgia Perimeter is a two-year public institution with six campuses in the Atlanta area; 5.9 percent of its 25,000 students are

Hispanic. Two years ago, the figure barely reached 2 percent. Cuevas attributes the increase to GPC's concerted effort to reach out to the Latino community and instill a college-going culture.

"We have a president who supports our Latino access/success efforts 100 percent," Cuevas says. "If you don't have someone at the top vigorously going out into the community and helping students consider college as an option, then it's not going to happen inside the campus walls."

In addition to hiring two Hispanic recruiters, GPC has a Latino retention program called the GPC Educational Achievement Program (GEAP). Funded by a \$500,000 grant from the Goizueta Foundation, the effort incorporates



**Eric Cuevas, a recruiter at Georgia Perimeter College and a first-generation college graduate himself, helps Latino students see — and seize — new opportunities on campus. "The college experience is uncharted territory for many Latinos," he says.**

## State's newest col

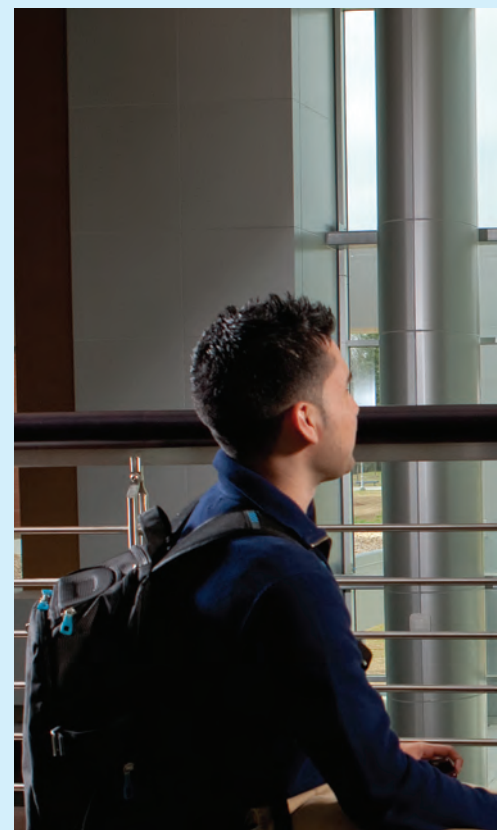
In middle and high school, Homero Gonzalez, now 21 and a senior at Georgia Gwinnett College (GGC), spent long hours in English as Second Language (ESL) classes trying to gain command of English. Though an A/B student, he says his teachers never mentioned college as a possibility for him.

"It seemed that the counselors didn't see ESL students as able to handle college, so they didn't push it as an opportunity," Gonzalez says. "The focus was on developing our English skills."

Gonzalez did go to college, however, on a state-funded HOPE scholarship. He now returns to his former high school — and others — to mentor Spanish-speaking students and show them, by his example, that college is possible.

The outreach stems from the Organization of Latin American Students (OLAS), a student-run group at GGC. OLAS' service learning component is one of several strategies and co-curricular opportunities GGC has created to encourage Latino students to enroll in and graduate from college.

Gonzalez, a former president of OLAS, says the group works to demystify the college process



## College makes Latinos' success a priority

for Latinos. It provides campus tours to Latino parents and prospective students, and its members also involve other Georgia colleges and universities in leadership training and networking activities.

"A lot of us who exited ESL classes knew nothing about college," Gonzalez says. OLAS gives us the opportunity to teach younger kids about higher education and what they need to do to get here."

Georgia Gwinnett College — which opened in 2006 at Lawrenceville, northeast of Atlanta — is the state's first new four-year public college in more than 100 years. According to latest Census figures, the Hispanic population in Gwinnett County nearly tripled in the past decade, from 64,000 in 2000 to 162,035 in 2010. About 20 percent of Gwinnett County residents are Hispanic.

Latino enrollment at GGC reflects those demographics and has increased every year. Of the 5,700 students currently enrolled, Latinos constitute 6 percent. The college's effort to recruit Latino students is aided considerably by its formal partnerships with

community centers, churches and other organizations. Instead of making the Latino community come to the school, recruiters go to them, says Louis Negrón, director of Minority Outreach Programs.

"Many Latino families work two or three jobs, so Sunday is the day when the entire family is together," Negrón says. "Our presence in their churches shows we care about their kids' future education."

When new students arrive at GGC, each one is assigned a faculty mentor — someone to advise and engage them throughout their undergraduate careers and into jobs or more education. Before students can register for classes, they must first meet with their assigned mentors. If a student misses a class, the mentor is notified.

GGC boasts unusually high retention rates — about 78 percent. The success is partly driven by its strategies to ensure that freshmen return as sophomores. GGC gives full- and part-time faculty members cell phones and pays for the service plans to encourage constant contact between students and instructors.

Faculty members are expected to respond to students' calls within 24 hours.

"It makes your instructor very accessible to the students," says Gonzalez, who once called his professor at midnight about an assignment.

Small classes, the presence of bilingual staff members in the admissions office, and a Spanish-language website also keep students engaged and focused on earning their degrees.

This May, Gonzalez will do just that. Through OLAS, he began networking with Telemundo Atlanta, a U.S. Spanish-language television network. Impressed by his leadership skills, the company offered Gonzalez a marketing position.

Those types of success stories are the best part of Negrón's job as a college recruiter. He says "nothing is more satisfying" than seeing a student reach what, in most cases, is an important family goal.

"These families have struggled to get their kid to college, and now that student is changing his life and that of his family because of their sacrifice," Negrón says.



**Homero Gonzalez (center) began his education in ESL classes and was all but overlooked by his high school counselors when it was time to apply for college. Today, he's a 21-year-old senior at Georgia Gwinnett College and a former president of the Organization of Latin American Students (OLAS). Here, he meets on campus with OLAS members (from left) Alejandro Dominiguez, younger brother Arnoldo Gonzalez and Ana Valencia.**

personal advising, counseling, tutoring, financial aid and academic support to help GEAP Scholars succeed.

GEAP Scholars also are assigned a mentor from the business community, and community service is an integral component of the program. Students visit high schools to talk with students about college and how they, too, can get there.

"The college experience is uncharted territory for many Latinos," Cuevas points out. "GEAP scholars are role models who can go into our communities and inspire other young Latinos to follow their path."

Many Latino students are pulled in opposite directions when they attend or even consider college. A 2009 survey from the Pew Hispanic Center shows that nearly 75 percent of 16- to 25-year-old Latinos who cut their education short during or immediately after high school do so because of family obligations.

Sometimes the educational aspirations of Latinos are derailed because they're reluctant to "out-earn" or "out-learn" their parents, says Cuevas.

"Many times I stage an intervention with a Latino family because they don't understand why their child wants or needs college," explains Georgia College's Javier Francisco. "There's the added pressure for the student to leave college because the family may fall apart without their help."

Becerra agrees. "It's hard enough getting into college for Latinos; it's even harder to graduate."

Becerra is determined to help other Latino students find their path to success. As a freshman, he founded Georgia College's Latino Student Association. He also helped to establish a campus chapter of Lambda Sigma Upsilon Latino Fraternity. Last year, he began a program for Latino pre-med students.

"Finding the right support group and the right people are an important part of what helps Latino students succeed in college," says Becerra. "These bonds make all the difference."

Becerra intends to keep building those bonds after he graduates. He wants to spend two years with Teach for America and then apply to medical school.

"It's about giving back to my Latino community, empowering other Latinos. For me, this empowerment comes from going to college. It's how we create change," Becerra says.

College enrollment is an important step in that change process, of course, but it's by no means the last one. What leads to real and lasting change is college completion, and that's why many Georgia institutions are working to improve Latinos' graduation rates and close the attainment gap between them and white students.



**Amy Molina, a recruitment and retention professional at Georgia State University, works with student Edgardo Delgado. Molina's profession is also her passion. "I changed my career path in college from engineering to higher education because I saw that many Latino students were not being encouraged to attend college," she says.**

## Young mother praises her college ‘family’

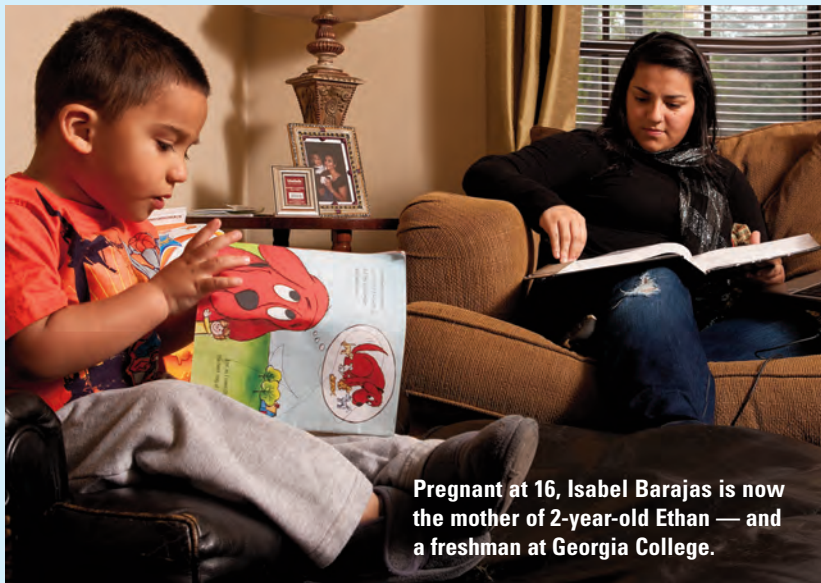
Giving up is not in Isabel Barajas' vocabulary. At age 16, she became pregnant, putting her plans for college in jeopardy.

"I was scared, but dropping out of high school wasn't an option," Barajas recalls. "I just had to work that much harder for my son."

Barajas graduated from Dalton High School at the top of her class. Her hard work was recognized with a Gates Millennium Scholarship — a good-through-graduation scholarship that can be used at any college or university.

Barajas, 19, is now a freshman at Georgia College, where she's planning a career in physical therapy.

Barajas' day begins at 5:45 a.m. She gets herself ready, feeds, bathes and dresses 2-year-old Ethan. After dropping him off at a nearby daycare center, Barajas attends classes. At 4 p.m., she returns to daycare to get Ethan and drives to a small off-campus apartment. Once there, she juggles mother-son playtime with dinner and studying. It's exhausting, she says, but worth it.



**Pregnant at 16, Isabel Barajas is now the mother of 2-year-old Ethan — and a freshman at Georgia College.**

Barajas says Georgia College eases the pressures of balancing work, school and single motherhood with some of its Latino- focused supports, including tutoring and mentoring.

"The people at Georgia College are rooting for your success," Barajas says. "They're a real support system here — a family. From the advisers to the other students, people want to help."

At Georgia State University (GSU), for example, the six-year graduation rate for Latinos in 2008 was 46.7 percent, compared to 42 percent for white students. The success was no accident. According to Amy Molina, a recruitment and retention professional at GSU, students can choose from about 60 freshman learning communities, including a Latino Freshman Learning Community, to help them connect with each other. Students attend financial aid workshops, study skills presentations, and discussions that provide social, academic and leadership opportunities for Latino students.

Sometimes, students themselves craft the strategies to advance Latino success.

About five years ago, GSU students lobbied the administration to create the Office of Latino Student Services and Outreach (LASSO). LASSO now serves as a "home away from home" for many Latinos.

LASSO also helps students persist to graduation with one-on-one advising, recruiting and mentoring, as well as support and resources through 10 Latino student organizations that work closely with LASSO.

To help younger Latinos see college in their future, a Latino Leadership Initiative pairs current college students with junior and senior high school students. GSU students show their younger peers how to navigate the admission and financial aid process, including offering advice on where to find Latino scholarships.

GSU also provides a mentoring support program

called the Latino Student Alliance. The effort pairs upperclassmen with incoming students to assist in their transition to GSU. The program is focused on offering interpersonal support and guidance. It also serves as a peer network for students.

Two years ago, GSU launched the Latino College Leadership Summit. The statewide gathering is student-driven and hands-on, says Molina. Students determine the conference theme and set the agenda. They also learn about networking opportunities, attend leadership-building workshops, participate in team-building exercises, and obtain information to help them apply for graduate school, internships and jobs.

"The idea is to provide students opportunities that will put them on a path to graduation," says Molina. "Just as important, we want to give Latino students a sense of identity and a feeling that they belong."

That feeling is something Molina knows well. As a first-generation college graduate, she's experienced many of the higher education challenges facing the Latino students she helps today.

"I changed my career path in college from engineering to higher education because I saw that many Latino students were not being encouraged to attend college or, if they were, they didn't have adequate support. That's why I decided to give back to the community and inspire and motivate Latino students to continue on with their education post high school," Molina says.

## First-generation ... and second to none

In 2006, Kevin Mascada's world changed forever. His father had been working two jobs to support his family. While driving a taxi, he was robbed and shot, later dying from his wounds.

"He had so many hopes and dreams for me," Mascada recalls. "He wanted me to go to college and become a doctor or a lawyer."

As a freshman at Emory University in Atlanta, 18-year-old Mascada is keeping his father's dream alive. Mascada hopes his college experiences will inspire his three younger siblings. Already, he is taking steps to ensure they follow a similar path.

"When I filled out the FAFSA (Free Application for Federal Student Aid), I had to figure it out myself," Mascada says. "Now I'm able to show my sister how it's done."

Mascada's decision to attend Emory — a private, four-year college where the cost of attendance can easily exceed \$50,000 a year — was influenced by several of the school's Latino-focused offer-

ings and student clubs. For example, Emory's MORE program provides one-on-one mentoring to help first-year undergraduates adjust to campus life.

The Latino Student Organization (LSO) brings together students who are interested in Hispanic culture, politics and social issues. Group activities include bowling nights, salsa workshops and community service events in Atlanta's Latino community.

Money is a constant concern for Mascada, who uses a combination of scholarships, need-based grants and loans to pay for his Emory education.

"There's a disconnect between high schools and colleges when it comes to any dialogue about where you, as a Latino, might go to college," says Mascada. "Many of my (high school) friends didn't consider college as part of their future because it just wasn't offered as an option."

That type of disconnect is especially hard for Latino students to overcome if they are also first-generation college students.

Noelia Sandoval is a good example. Before Sandoval enrolled at Agnes Scott College in Decatur, Ga., only one of her parents had even finished high school. Her mother cleaned houses; her father drove a truck. They wanted a better future for their daughter — one that included college — but they had no idea where to start.

"At a certain point in my education, my parents couldn't help me with school. They wanted me to do well, of course, but it was up to me to figure it out," Sandoval says. "When it came to college or SATs, I knew nothing."

Janixia Reyes, assistant director of admissions at Agnes Scott, gave her the help she needed. Reyes, a first-generation college student and herself an Agnes Scott graduate, brings unique insight to her role at the college. Reyes didn't become a permanent U.S. resident until two months before filing her FAFSA.

Agnes Scott is a private, liberal arts women's college with an enrollment of just 800. Of the current freshman class, 7.4 percent are Latinas — and their chances of success at Agnes Scott are actually better than those of their non-Hispanic classmates. In 2009, the six-year graduation rate for the school's Latina student population was 71 percent, compared to 67 percent for non-minority students.

Scholarships, one-on-one advising from committed advisers such as Reyes, and a strong network of Latina student organizations all seem to play a role in the success of the college's Hispanic students.

For Sandoval, a student organization called Latinas UNIDAS has made a difference. Sandoval, 19, serves as co-president. During the academic year, Sandoval and other UNIDAS students host meetings and events to discuss the influence of Latinos in education, politics and the economy. Sandoval also aids the admissions staff as a student recruiter, sharing her first-generation experiences with prospective Latino students.

For Sandoval, who hopes to become an immigration lawyer, the personal outreach and support she receives at Agnes Scott have been profound.

"I've always had that American Dream about college," she says. "When I get discouraged, someone at Agnes Scott — Janixia or my Latinas UNIDAS sisters — reminds me that I can succeed. And I do."



**Noelia Sandoval (left), 19, is being helped along the path to success at Agnes Scott College by Janixia Reyes, assistant director of admissions. Reyes knows that path very well. Like Sandoval, she came to Agnes Scott as the first in her family to attend college.**



# El Paso colleges link up to lift students

Tommy Gonzales, 30, is the first college-bound member in his family. Back in the late '90s, during his years at Riverside and Eastwood high schools in El Paso, Texas, sports were Gonzales' top priority, and academics ranked a distant second. Just "getting by" was fine, he says.

After high school, Gonzales held a series of manual labor jobs in construction and landscaping. One day, Gonzales says, it hit him: If he ever hoped to get a better job, he needed more than a high school diploma.

Gonzales enrolled at El Paso Community College (EPCC) and earned an associate degree in computer networking. He'll soon receive a second associate degree, in computer security.

Gonzales' story is one of thousands of similar stories at EPCC. Most students there are first-generation students; more than 62 percent attend part-time, balancing college with work and family responsibilities. Eighty-six percent are Latino. Though half of EPCC's students have never gone to college before, just as many are finishing what life has somehow interrupted. They see the college as a place to retrain, re-school and re-skill, says EPCC President Richard Rhodes.

EPCC is part of Achieving the Dream: Community Colleges Count, a national initiative to increase student success at the nation's two-year colleges. EPCC has been a participant in Achieving the Dream since the effort was launched in 2004. Rhodes says the initiative has been transformational for EPCC, helping the college reduce the number of students who need developmental courses and boosting graduation rates.

This year, EPCC received Achieving the Dream's top honor, the Leah Meyer Austin Institutional Student Success Leadership Award. For Rhodes, the award affirms EPCC's efforts to foster and maintain a college-wide culture of student success, one that is built on the use of data to drive change. (*Visit our website to hear more from Rhodes about Achieving the Dream.*)

"More than anything, Achieving the Dream shines a light on the potential of collaborative work and using data to determine whether you're making a difference,"

Rhodes says. "We've broken down what used to be doors of competitiveness to bridge a closeness with the community and with the University of Texas at El Paso (UTEP) to create the best pathway for students."

External collaborations between UTEP and EPCC date back to 1991, with the creation of the Collaborative for Academic Excellence. The collaborative — which includes both institutions, 12 local school districts, the city's chamber of commerce, and representatives from local government and community organizations — seeks to develop better education pathways for students. Since the Collaborative's creation, the relationship between EPCC and UTEP has deepened and

strengthened. The two schools — which are both Hispanic-Serving Institutions (see "What is an HSI?") — now collaborate on a wide range of programs, tools and supports to boost student success and accelerate degree completion.

As HSI presidents, Rhodes and UTEP's Diana Natalicio are serious about the "S" part of the HSI designation. The programs at EPCC and UTEP are strategically designed to truly serve Latinos, intervene at appropriate points and guide students to a degree, certificate or credential. Data collection and analysis inform every effort to enhance students' access and success.

"We shouldn't be part of the problem; we should be the solution," says Natalicio. "Too often there's a lack of trust between a community college and a university. We

believe collaboration is far better than competition for student success."

For students, success equals degrees, and one notable example of how EPCC and UTEP work together to foster those successes is their approach to "reverse transfers." In essence, this approach allows students to earn an associate degree from EPCC while actually attending UTEP.

In many cases — often because of family, transportation or work issues — students begin classes at EPCC but switch to UTEP before earning enough credits for an associate degree. In the reverse transfer process, a degree audit system developed by UTEP keeps track of students who earn enough credits for an A.A. through

## What is an HSI?

The U.S. Department of Education defines Hispanic-Serving Institutions (HSIs) as those eligible for federal programs specifically designed to assist colleges serving large numbers of first-generation, low-income Hispanic students.

To merit federal HSI designation, an institution, system or district must have total Hispanic enrollment that constitutes at least 25 percent of total enrollment. ("Total enrollment" includes full-time and part-time, for-credit students at both the undergraduate and graduate levels.) In addition, at least half of all students must qualify for need-based financial aid.

It's important to emphasize that the HSI designation merely indicates eligibility for funds that can be used to enhance Latino students' success. It does not necessarily indicate an institution has made a special effort to assist Latino students. In other words, though all HSIs have a high concentration of Latino students, not all HSIs choose to concentrate on those students.



El Paso native Tommy Gonzales, 30, got a late start on higher education, but he's making up for lost time at El Paso Community College. He's already earned one associate degree (in computer networking) and will soon earn a second (in computer security).

their courses at the four-year school. Last year, 1,100 students received associate degrees from EPCC through this process.

"For many students, it's the first degree they've received," Natalicio says. It gives them confidence to complete their bachelor's degree."

Gaining confidence — plus relevant 21st century skills — is one of the many benefits students realize from EPCC's Student Technology Services (STS) initiative. STS is a student-managed program that hires and trains students and gives them opportunities to gain work experience and earn an income. (See Page 18 for more on STS.)

UTEP is located in El Paso County, one of the nation's poorest. According to 2010 Census figures, 82 percent of the 800,000 residents in this U.S.-Mexico border county are Latino — and 83 percent of UTEP's 22,000 students are from the area. Half are first-generation students, and a third come from families earning \$20,000 or less a year.

In many ways, then, UTEP's students personify the many challenges that can deter Latinos from the college path — including cultural differences, limited college readiness, immigration issues and financial constraints.

Despite these realities, UTEP is making sure more students complete their programs, says Natalicio. Enrollment has grown by 35 percent over the past decade, and the number of degrees awarded has increased by 77 percent.

Several factors have contributed to this positive trend, including policy changes, academic interventions and institutional reforms. And there's another important factor: constant vigilance and reassessment.

"One of the most important things we do is to take the pulse of students on a regular basis," Natalicio explains. "The interventions we design are far more effective this way than if we import an initiative from another institution or adopt someone else's bright idea."

One such home-grown idea is the EPCC Transfer Scholarship, created by UTEP in 1997 to help students at the community college continue their education at UTEP. A total of 333 students have received funding through the transfer program; 267 have completed their degrees.

"It is more than a financial bridge," says Elizabeth Justice, director of UTEP's scholarship programs. "It lets students know that someone believes in them enough to fund their education. That faith can determine whether a student completes a degree or drops out."

For Maria Escobedo, 56, the transfer scholarship is helping her turn a lifelong dream of becoming a teacher into reality.

"Without the scholarship, I wouldn't be here," she says. (See Page 19 for more about Escobedo.)

An Emergency Book Loan Program, tuition installment plans, joint admissions and financial aid applications with EPCC, and increased outreach efforts are other ways UTEP is increasing access and degree completion.

"Some of these efforts are small things, but they make a huge difference," Natalicio notes.

Another difference-maker is UTEP's focus on helping students succeed in developmental or remedial courses, particularly developmental math. Four years ago, after seeing data showing that students often dropped out after failing developmental math, UTEP launched a free, voluntary summer program called Mad Dog Math (MDM). In the program, incoming freshmen who

placed into developmental math use an online software program called Aleks to master content at their own pace. Comprehension is boosted by one-on-one mentoring.

"If we can get students past their developmental math course, odds are they will still be here the following year," explains Denise Lujan, director of developmental math. "Our statistics show that if students fail one course their first semester at UTEP, 85 percent will drop out of school. The percentage goes up to 99 percent if they fail two courses."

A total of 132 students completed MDM in the summer of 2010. Sixty-one percent moved on to college-level math. Sixty-nine percent of

students who participated in MDM in 2008 were still enrolled at UTEP in fall 2010. The percentage is 77 percent for 2009 MDM students.

Andres Torres, 18 and a freshman at UTEP, spoke no English when he came to the United States eight years ago. Mad Dog Math made math "click" for him, he says. Today, he's tutoring other Latino students at his former high school.

"At first, it was a challenge," Torres says of his math struggles. "But I don't believe challenges are obstacles to my success."

Getting young Latinos to confront those challenges — to see themselves as college material — isn't always easy, says Josie V. Tinajero, dean of the College of Education at UTEP and creator of the university's Mother-Daughter/Father-Son (MD/FS) program. Launched in 1986, MD/FS offers a leg up to sixth-grade Hispanic



**Denise Lujan, director of developmental math at UTEP, works with first-year student Andres Torres. Torres, who spoke no English when he came to the United States eight years ago, says a summer program called Mad Dog Math made math "click" for him.**

*Continued on Page 17*

## Raising aspirations across generations

Two college diplomas hang prominently in Sylvia Luna's office — a bachelor of science degree from Park College and a master of arts from Webster University. For Luna, the diplomas represent years of hard work and achievement.

Beside her academic degrees is another framed and equally important piece of paper: Luna's certificate of participation in the Mother-Daughter/Father-Son (MD/FS) program at the University of Texas at El Paso (UTEP).

"That program is the reason for my higher education success. It inspired me to take the chance and go to college," Luna says.

Created in 1986 by Josie V. Tinajero, dean of UTEP's College of Education, the MD/FS program raises college expectations of sixth-grade students and their parents. In 1991, the program expanded its outreach to Latino boys and their fathers.

Luna, now 58, learned about the MD/FS program in 1992 from her daughter, Corrinne.

"I'd been working since high school and thought I was a good professional," Luna recalls. "But I also trained people

with a college degree, yet I never moved up. The Mother-Daughter program showed me there was so much more out there for my daughter and myself."

The MD/FS program provides opportunities for students and parents to develop leadership skills and explore career options. Successful Latino professionals, including judges, news anchors and CEOs, serve as role models and share stories of their own college journeys.

For Luna, the words were life altering.

"When I heard about the struggles these women went through to get where they are, I looked inside myself and realized I could do it, too," Luna says.

Experiences in the MD/FS program are designed to broaden participants' perceptions of college and their community. For example, as part of a community service project, students may visit the elderly or organize food drives for the needy. They document their work and later share the life lessons they learned.

As soon as her participation in the MD/FS program ended, Luna enrolled at El Paso Community College. The transition wasn't easy, particularly because of

her difficulty with math. Self-paced math emporiums, mentoring and one-on-one tutoring helped bring Luna up to speed. After receiving her associate degree, Luna went on to earn bachelor's and master's degrees.

"Personally and professionally, the Mother-Daughter program is one of the most rewarding experiences of my life. If not for that program, I don't think my eyes would have been opened to the possibilities of college," Luna says. "It gave me the chance to complete the person I was meant to be."

Luna now works as a grant coordinator at UTEP, overseeing a scholarship program to help students pursue bilingual degrees. This year, she and her daughter, a fourth-grade teacher in the El Paso Independent School District, spoke to a new crop of sixth-graders and parents in the MD/FS program. As she addressed the crowd, Luna offered the same motivational advice that inspired her college journey in 1992.

"No matter what the obstacle is, if you really want something, you can do it." Luna says.



**Sylvia Luna (right) says UTEP's Mother-Daughter/Father-Son program gave her the spark of inspiration she needed to go to college. She attended the program in 1992 with daughter Corrinne (left), who was then a sixth-grader. Since then, Sylvia Luna has earned three degrees, including a master's, and now works as a grant coordinator at UTEP. Corrinne Luna is now a fourth-grade teacher in El Paso.**



**Josie V. Tinajero is dean of the College of Education at UTEP and creator of the university's Mother-Daughter/Father-Son (MD/FS) program. The goal of MD/FS, she says, is to plant the idea of college enrollment as early as possible in young people's minds and to engage parents as advocates for their children's college success.**

*Continued from Page 15*

girls and boys who are the first in their families to go to college. (See Page 16 for more on MD/FS.)

"The idea is to get students and parents on board to the idea of college as early as possible. High school is too late," says Tinajero. "Beyond getting students into college, we want them to graduate."

Beginning with first-day orientation, boys and girls attend college classes, learn about careers, participate in community service projects, and hear from successful Hispanic men and women about their paths to college.

One key strategy in the MD/FS program is to engage parents as college advocates. To bring them into the process, mothers and fathers may attend a presentation on financial aid or discuss the value of college with UTEP faculty, while students tour the campus.

Nearly all students who participate in MD/FS complete high school, according to Tinajero. Participants also are more likely to enroll in advanced courses, earn higher grades and outscore their peers on state achievement tests. More than 5,000 students have participated in the MD/FS program, and the effort has been replicated by other universities in the University of Texas system.

What's more, the program inspires more than young people. Parents are motivated, too.

Claudia Rizo Davila was 14 when she participated in the MD/FS effort in 1986, the first year of the program. She says the program did far more than show her a path to college; rather, it revealed the possibility of an entirely new life — for herself and her mother.

"That program showed me there was a world outside the housing projects," Davila says, "and it helped my mother break the cycle of domestic violence."

After graduating high school, Davila enrolled at EPCC. She later graduated from UTEP with a bachelor's degree in bilingual education. Today she is a teacher at Pebble Hill Elementary in El Paso.

Davila's transformation thrills Natalicio and Rhodes. "This is why we do what we do," Natalicio says.

"We're transforming lives, and that is a huge privilege."

Rhodes agrees.

"As an institution, everything we do must focus on helping students achieve momentum points. When a student enters our doors, it's our job to determine where they are at that moment and then do everything we can to get them to the next level," he says.

## Taking a difficult path to a brighter future

Eight years ago, 38-year-old Marisela Rizo became a single parent and sole provider to her son, Ernezzto. It was at that moment she decided a college education was the ticket to a better future.

Rizo's family — her mother, five brothers and a sister — questioned the decision, suggesting the time for college had long passed.

"Some were very blunt; they said I was too old. I had the same thoughts," Rizo admits. "But I looked at my son and knew I couldn't leave my generation this way. I had to make it better."

The emotional and financial pain from a long and grueling divorce took its toll on Rizo, but in 2006 she enrolled at El Paso Community College. Like many first-generation students, she was wary at first. She didn't know about financial aid or the courses she needed to fulfill her dream of becoming a nurse — a dream that was sparked by the premature birth of her son.

"Growing up, the message was to find a job after high school. College wasn't an option," recalls Rizo, now 46.

But Rizo is following her passion for nursing, even though the path at EPCC hasn't been easy. She needed lots of

developmental coursework — and she credits peer tutoring, academic supports and the commitment of EPCC instructors, many of whom offered help on Saturdays, with helping her catch up academically.

With an annual income of \$7,000 to \$10,000, Rizo and 10-year-old Ernezzto often lack what most Americans consider basic necessities. Her car breaks down often, she says, and she and her son must ride the bus or rely on friends for transportation.

Scholarships help pay for Rizo's classes at EPCC.

Her "saving grace" has been the college's Student Technology Services (STS) program. Created in 2003, STS helps students learn new skills and gain professional experience by working in various departments at EPCC and with local businesses. Students also earn a paycheck.

"When STS hired me, I couldn't believe it. I still can't," Rizo laughs. "It's been the backbone of my education. If I felt like giving up, the people at STS encouraged me to keep going. And I did."

The computer training from STS helped Rizo find a job at KCOS-TV, doing Web programming and designing the station's monthly newsletters. Her computer skills

are now so well-honed that she helps EPCC on Web-related projects.

"(Before the training), I knew nothing about computers," Rizo says. "Now some of my nursing instructors ask for help."

Rizo's confidence was shaken last year when she received a 74.3 as her second semester's grade. She needed 75 to pass.

"I had to take the entire semester over. I was devastated, embarrassed and ashamed," Rizo recalls. "I thought I'd disappointed everyone who invested so much in me. It was Dr. Rhodes (EPCC President Richard Rhodes) who reached out and made me promise that I would not give up on my dream."

Rizo keeps a photograph of herself with Rhodes, and whenever she feels unsure about her academic abilities, she looks at the photo and remembers her promise.

This May, Rizo will keep that promise when she receives her associate degree. She plans to work for Las Palmas/Del Sol Healthcare and enroll at the University of Texas at El Paso to earn a bachelor's degree in nursing. Eventually, Rizo hopes to be a pediatric or surgical nurse.

"There have been struggles. But when I receive my diploma, I can say we — my son and I — achieved this together."



**Marisela Rizo of El Paso says goodbye to her 10-year-old son, Ernezzto Lucero, as the youngster heads to school. Rizo, 46, will soon earn an associate degree in nursing from El Paso Community College. It's been a long road, she admits, "but when I receive my diploma, I can say we — my son and I — achieved this together."**

## Transfer scholarship a key to success

Maria Escobedo, 56, is a soft-spoken grandmother and student at the University of Texas at El Paso (UTEP). As a child growing up in Chihuahua, Mexico, Escobedo dreamed of becoming a teacher. In 1972, her family moved to California, where Escobedo later met her future husband. Her college dream, however, would remain just that — a dream. Escobedo's husband wanted his wife to stay home, work and care for their children. Education wasn't part of the plan, she says.

While living in California, Escobedo found work in a chinaware factory. The hours were long and the conditions harsh. With no air conditioning, temperatures inside the building often reached 100 degrees. At night, Escobedo studied to get her high school diploma.

Escobedo and her family eventually moved to Texas. In 2004, after being laid off from her job at Walmart, she decided that her dream of teaching had been on hold long enough. Scared but determined, Escobedo enrolled at El Paso Community College (EPCC). Although her husband didn't fully support her decision, he didn't stand in her way this time.

"I was more secure in myself by this point," Escobedo recalls. "And I had wanted this for so long."

In 2006, after getting an associate degree, Escobedo applied for a scholarship to UTEP through the UTEP-EPCC Transfer Scholarship Program.

That was five years ago. In May 2011, Escobedo will receive her bachelor's degree. Graduation day will be especially poignant because of the recent death of Escobedo's father.

"My father would be so proud," Escobedo says. He wanted this (education) for me. Without the scholarship, I don't think it could have happened."

To realize her college dream, Escobedo had to take two buses three times a week to attend classes. As the "older student" in those classes, Escobedo initially felt out of place. In time, though, she became a mentor to her younger peers. Her achievements also have made an impression on her younger daughter, who once considered dropping out of college.

"I was mad when she started talking about leaving college. I wanted to show her that if I could make it through college, she certainly could," Escobedo says.

Escobedo's goal is to teach full time.



**Maria Escobedo, a 56-year-old grandmother who grew up in Mexico, is close to realizing her long-held dream of earning a bachelor's degree.**

For the past six months, she's been working as an intern at Capistrano Elementary School in El Paso.

"I see myself in these children," Escobedo says. "As someone who's strug-

gled and been knocked down many, many times, I want to tell them to never give up on their dreams, no matter how long it takes to get there. Everything is possible — especially here in America."

# Programs have a clear ‘STEM-phasis’

As the nation's need for graduates in the “STEM” fields (science, technology, engineering and math) continues to grow, Hispanics in those disciplines, especially Latinas, are severely underrepresented. According to the National Science Foundation, Hispanics received just 8 percent of science and engineering bachelor's degrees awarded in 2007.

Improving the state of STEM education for Latinos isn't just an issue of equity or social justice; it's a national economic imperative. The country's ability to innovate depends on the contributions of scientists, mathematicians, engineers and technology professionals. Latinos are the nation's fastest-growing population group, already numbering 50.5 million. Those numbers are expected to more than double by the year 2050, when experts predict that one in four Americans will be Latino. Clearly, it is vital that we find ways to inspire new generations of Latinos to train for STEM-related careers.

Targeted student support programs can be critical factors in getting more Latinos to enroll and succeed in STEM courses. Three such programs are profiled here. Each is recognized as an Example of Excelencia, a data-driven national initiative created in 2005 by Excelencia in

Education to identify programs and practices that show evidence of improving Latino students' achievement.

## Project MISS makes it all add up

Pamela Pilz, 38, remembers the summer of 1990 vividly. Instead of heading to the beach, the high school junior spent her time pondering logarithms and trigonometric equations at California State University-Fullerton as part of the first Project MISS math program.

“I was 7 when I came to the United States. My uncle taught me math through songs,” Pilz recalls. “After failing an algebra test in high school, I learned about Project MISS.”

Created by math professor David L. Pagni, Project MISS (for Mathematics Intensive Summer Session) is a voluntary summer math camp designed to boost the math skills — and the confidence — of girls interested in the STEM disciplines. This July, 140 girls from 20 area high schools will participate in Project MISS. Since it began, 1,013 students have completed the program.

Project MISS girls come from underrepresented ethnic groups and typically are the first in their families to attend college. Most Project MISS participants are Latinas — in fact, 77 percent of participants in 2010.

Five days a week, six hours a day, girls work in teams with Cal-State math instructors and Project MISS graduates on academic exercises geared for students in Algebra I and II, geometry and pre-calculus. Classroom learning is reinforced with outside math-related activities, including relay races and scavenger hunts on Cal-State's campus.

Guest speakers — including solar energy experts and women scientists involved in crime scene investigative work — provide a real-world dimension to the program. At the end of Project MISS, girls receive a highly coveted award: a state-of-the-art graphing calculator.

During the program, it becomes clear that mathematics is more than a gateway to STEM-related careers. By gaining a better grasp of math concepts, the girls also acquire analytical and critical-thinking skills — abilities deemed vital in the 21st century workforce.

They also increase the nation's odds of diversifying that workforce, particularly in the STEM careers.

“The number of young people wanting careers in science and mathematics is shrinking, even though we need more people in those fields,” says Pagni. “Young girls are especially underrepresented because of a lack of role models.”

Cristian Bueno, 21, might have been one of those statistics. Bueno was 13 when she and her mother emigrated from Mexico. Unable to speak English, Bueno was placed in English Language Learner (ELL) classes. She says the experience made her feel like an outcast, an impression that followed Bueno to high school, where she discovered Project MISS.

“The program changed my life in so many ways,” Bueno says. “It made math fun. I became part of something. Dr. Pagni taught me how to believe in myself.”

Graduates of Project MISS often return to serve as tutors and mentors. Pilz — now a math teacher at Katella High School in Anaheim and a part-time instructor at Santa Ana Community College — has been a guest speaker for Project MISS.



**David Pagni, a mathematics professor at Cal State-Fullerton, developed the Project MISS program more than 20 years ago. The summer math camp is geared toward teen girls interested in the STEM fields.**





Pamela Pilz (left), a math teacher at Katella High School in Anaheim, Calif., works with student Taizet Avila. Pilz, who had trouble with algebra herself as a teen, got help through Project MISS (Mathematics Intensive Summer Session), a summer math camp designed for girls interested in the STEM disciplines.

The words of encouragement from successful women in STEM careers — many of whom once faced the same challenges as Project MISS girls — can have a lasting influence.

"You see these women, hear their stories and realize you can succeed, too," Bueno says.

After participating in Project MISS as a high school sophomore, Bueno signed on as a volunteer tutor. She's now getting ready to graduate from college and plans to apply for her teaching certification.

"In my ELL classes, some of the kids ended up in gangs and dropping out of school. They just needed a little push, and maybe things would have been different," Bueno says. "That's why I want to be a teacher. I hope to change someone else's life the way Project MISS changed mine."

Since 1990, 98 percent of Project MISS girls have completed high school and enrolled in college. About 20 percent declare a major in a STEM field, Pagni says. In 2010, before-and-after tests of math competency showed that MISS students demonstrated a 93 percent gain in content knowledge.

Students also are getting a boost in self esteem. "After a student returns to high school, we hear from teachers who tell us they are more outgoing overall, ask more questions in class and are much more confident about their academic abilities," Pagni says.

Learning doesn't stop when Project MISS is over. The camaraderie among the girls often evolves into lasting friendships. Pagni and his staff also stay in touch with Project MISS students and their parents. And, each MISS student receives a birthday card, reminding her of the MISS program. (The card, of course, contains a math problem to solve.)

Briana Bonilla, 15, took part in Project MISS last year as a freshman; she hopes to enroll again this summer.

"It opened my eyes to a whole new world," Bonilla says of Project MISS. "It's so much more than math. You gain a sense of empowerment; you become a better you."

### "3Cs" are the key to the success

Getting to and through college hasn't always been easy for Sandra Hernandez, 22. Like many first-generation students, Hernandez faced certain pressures on her path to a college degree.

"My parents gave up so much for me," Hernandez says. "When I began college, I had so many questions but no one to ask and no one to look to as an example. The people in SEES made the difference for me."

SEES, or Science Educational Enhancement Services, is a voluntary program for students at the College of Science at California State Polytechnic University (Cal-Poly) who are traditionally underrepresented in science.





**Briana Bonilla, a 15-year-old sophomore at La Mirada (Calif.) High School, participated in Project MISS last year and plans to attend again this summer. "It's so much more than math," she says of the program. "You become a better you."**

The majority of participants are first-generation students, and two-thirds are Latino.

The premise of SEES is based on the 3Cs — a commitment to content, community and communications, says Barbara Burke, SEES director. SEES programs have a strong underpinning of content, Burke explains, and students are required to master demanding science curriculum. SEES activities help students connect with other students who share similar goals and backgrounds, thus establishing a vibrant academic learning community of future colleagues. By working together in SEES activities, students learn the vocabulary needed to communicate with peers and professionals.

SEES participants also receive academic support, career networking and community outreach through

advising, mentoring and innovative workshops.

The workshops — called Academic Excellence Workshops — help strengthen students' connections to campus life and promote their success in chemistry, math and physics. Workshops are patterned after a student learning model developed by Philip "Uri" Treisman, a nationally noted math professor at the University of Texas at Austin. His model focuses on merging, rather than separating, students' academic and social lives to help them excel in introductory math, physics and chemistry classes.

SEES takes a cooperative approach to learning. Students sign contracts before participating in the workshops, where they work in groups to solve math problems and discuss the technical steps involved.

This small-group interaction is instrumental in boosting student learning and success, says Burke.

Facilitators and mentors are an integral part of SEES. Facilitators design the format of the workshops, devising problems that take abstract concepts and make them concrete and understandable. Because the workshops concentrate on teaching students how to learn, facilitators rarely answer students' questions directly; instead, students are encouraged to work with other students to find solutions. Every SEES student must contribute to workshop discussions.

According to Burke's data, half of the students who participate in the workshops earn A's or B's (3.0 or higher) in their chemistry, math or physics classes. The average GPA for students in those subjects is 2.1, says Burke.

Peer-led workshops and peer mentoring are other important components of SEES. For example, first-year SEES students are paired with upper-division students, while older mentors partner with faculty members.

"A lot of our students need extra support," Burke says. "SEES provides a community and creates a connection between students who share first-generation experiences. The connectedness that comes from this group dynamic ultimately allows students to learn at a much higher level."

Hernandez, 22, is a SEES participant, facilitator and mentor. As the oldest and first in her family to go to college, Hernandez began SEES as a freshman. She says it not only helped improve her science grades, it also kept her motivated to make progress toward a degree.

Next fall, she plans to enter Cal-Poly's teaching program. She eventually hopes to teach science or biology.



**Barbara Burke leads the Science Educational Enhancement Services (SEES) program at California State Polytechnic University in Pomona. She says SEES "provides a community and creates a connection" between first-generation students such as Sandra Hernandez, 22, (left) and Ashley Santiago. "When I began college, I had so many questions but no one to ask," Hernandez recalls. "The people in SEES made the difference for me."**

Ashley Santiago, 19, also credits SEES with boosting her GPA. More important, it inspired her to pursue a career in science. This summer, Santiago plans to work on an independent research project — an opportunity sparked by her involvement in SEES.

The first-year persistence rate of SEES participants is about 80 percent, compared to 65 percent for underrepresented students who are not in the program. According to Burke's data, graduation rates for SEES students are 12 percent higher than those of all College of Science students, and they're twice that of underrepresented students in the College of Science and non-SEES participants.

SEES graduates about 35 students a year. Typically, 22 percent of those students attend graduate or professional school. Of the more than 500 SEES graduates over the years, 79 went on to earn doctoral-level degrees (50 M.D.s, seven D.D.S.s and 22 Ph.D.s), and 70 earned master's degrees.

## TFS shapes scientific minds

Few college students socialize with the chief medical examiner of Miami-Dade County or conduct a "Swamp Tromp" through the Florida Everglades. But for students in the Tools for Success (TFS) program at Miami Dade College, it's nothing out of the ordinary.

Nurturing future scientific minds is the premise of Tools for Success. The TFS program, which is funded through a grant from the National Science Foundation, began in 2007 on Miami Dade's Wolfson and Kendall campuses to boost the retention, transfer and graduation rates of underrepresented students in the STEM fields.

Fifty-two percent of students at Miami Dade College (MDC) are first-generation college students; 69 percent are Hispanic. Only 26 percent of students who enter MDC are college-ready. Fewer than 7 percent receive a degree after two years. The average three-year graduation rate for STEM majors is 27 percent.

TFS is designed to improve those statistics. Students benefit from intensive and customized student supports, including real-world work experiences, tutoring, faculty mentoring, learning communities, transfer and career counseling, financial aid, field trips, internship opportunities and community-service projects. Eligible students who enroll in the one-credit Tools for Success course get free tuition, an award of \$1,000, and an iPod. Students also can earn a \$2,000 transfer scholarship.

For students like Jose Portillo, 28, the opportunities offered by TFS are instrumental to college success. Portillo grew up on a coffee farm in Nicaragua. It was there he discovered a passion for birds. After changing his major from hospitality to science, Portillo sought out TFS. The connections and academic supports not only brought his science knowledge up to par, they also opened doors to a research career.

"One of the TFS speakers was from the USDA. She helped me apply for a research grant at the University of Georgia after I got my A.A. in biology," Portillo says.



**Jose Portillo, 28, an agriculture student at the University of Georgia, does grant-funded undergraduate research in poultry science — something he says could never have happened if he hadn't participated in the Tools for Success program.**

Portillo's research focuses on poultry science. He studies the effects of hormone treatments on leghorn and boiler chickens. In December 2011, Portillo will graduate with a bachelor's degree in agriculture.

"None of this would have happened if not for Tools for Success," Portillo says.

TFS students have significantly higher GPAs than their peers, and the program retains more than 80 percent of its students in STEM majors. Seventy-five percent of the first two cohorts in TFS have received their associate degrees and transferred to upper-division institutions, according to Cynthia Conteh, TFS director.

"We're creating a small community here," says Conteh. "Students find that the support they receive makes a huge difference in their STEM success." ●

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