

California State University, San Bernardino

## CSUSB ScholarWorks

---

Latino Education and Advocacy Days (LEAD)  
Video Recordings

Arthur E. Nelson University Archives

---

2014

### Panel Discussion: "Diversifying STEM Education: Challenges and Best Practices"

CSUSB - Latino Education and Advocacy Days (LEAD)

Follow this and additional works at: <https://scholarworks.lib.csusb.edu/lead>

---

#### Recommended Citation

CSUSB - Latino Education and Advocacy Days (LEAD), "Panel Discussion: "Diversifying STEM Education: Challenges and Best Practices"" (2014). *Latino Education and Advocacy Days (LEAD) Video Recordings*. 3.

<https://scholarworks.lib.csusb.edu/lead/3>

This Video is brought to you for free and open access by the Arthur E. Nelson University Archives at CSUSB ScholarWorks. It has been accepted for inclusion in Latino Education and Advocacy Days (LEAD) Video Recordings by an authorized administrator of CSUSB ScholarWorks. For more information, please contact [scholarworks@csusb.edu](mailto:scholarworks@csusb.edu).

## LEAD Original Programming

### "Diversifying STEM Education: Challenges and Best Practices" (2014)

START – 00:00:00

[ Music ]

>> Bienvenidos and welcome to the next installment of LEAD Media Programming from Studio 54, Campus of California State University San Bernardino, the digital media platform for inspired educators, leaders and community activists and advocates taking our message directly to the people, to the gente. Thank you for sharing our common interest in the analysis, discussion, critique, dissemination and commitment to the educational issues that impact Latinos. I'm your host, Dr. Enrique Murillo, Jr., and this episode is a syndicated replay from Season 5 of LEAD Summit 2014. The theme that year was Latino male crisis in the educational pipeline. And that pipeline does often restrict and exclude our youth from the labor market and promotes mistrust and resentment towards authority, the criminal justice system and all forms of social control. This panel was entitled Diversifying STEM Education, Challenges and Best Practices. This was when I remember STEM had become a more frequent discourse. President Obama was in the office. The economy had become increasingly globalized. And while Latinos accounted for more than 50% of our country's population growth during the previous decade, yet only 8% of Latinos nationwide were graduating with a bachelor's degree in a STEM field. So it was imperative that we discuss all the challenges and best practices. Continue and enjoy the full value and complexity of this episode. We extend our appreciation to all our LEAD sponsors and partners, planners, volunteers, speakers and panelists, of course, the production team, affiliates and townhall chapters and commend them all for lifting their voice and uplifting the plight of Latinos in education. Thank you. Gracias, claza kamati [phonetic].

>> Thank you and good morning, everyone. The quality of the future US labor market depends on both education and job skills. And if the United States wants to remain compatible [phonetic], our ability to produce high levels of educated and skilled workers is critical to the overall performance of this participation in the global economy. The increasingly globalized economy also means that the US is facing more competition, as other nations increase their skills in the STEM subjects science, technology, engineering and mathematics. Increasing the representation of Latinos in the STEM fields is therefore absolutely vital in the economic and scientific advancement in the United States, as Latinos accounted for more than 50% of our country's population growth during the last decade. Yet, only 8% of Latinos nationwide graduate with a bachelor's degree in the STEM field. This panel of industry experts and college administrators will discuss challenges and best practices for creating successful community college to four-year college pathways in STEM fields for Latino students. With that said, Let me introduce to you the panel of Diversifying STEM Education,

Challenges and Best Practices. My right-hand side, Dr. Gisele Ragusa, who is unfortunately not here today. She's Associate Professor, Division of Engineering Education, Viterbi School of Engineering, University of Southern California. We also have Pilar Montoya, CEO, Society of Hispanic Professional Engineers. We have Marvin Martinez, President of East Los Angeles College; Emanuel Pleitez, Strategist, Qlovi and Chairman, Hispanic Heritage Foundation; and moderator, Dr. Gustavo Chamorro, Deputy Sector Navigator, ICT/Digital Media, Rancho Santiago Community College District.

[ Applause ]

>> Thank you, Jessica, for that introduction. And on behalf of our panel, we're very glad to be here and to provide you with information in regards to STEM. Now, our panel is supposed to discuss some of the challenges and some of the best practices to transfer more Latino students into STEM pathways. Now, in my opinion, we have discussed the challenges I think in great detail in the past, but I don't think we have discussed what some of those best practices, what is it that we're doing to get our students more involved into these careers. However, I still think it's important for us to talk about the challenges because those obstacles are keeping our students from going into these careers. One of the obstacles that I can cite, it's something that we experience when we partner with Novelas Educativas to do a couple of STEM videos. For those of you in the audience and watching, you can get these videos at [NovelasEducativas.com/stem](http://NovelasEducativas.com/stem). But, basically, for the novellas, we had to do a little bit of research. And we interview mostly Latinas who were either teaching in STEM or working in STEM. And the biggest challenge that we found was more cultural. And this was because, as you may already know, STEM fields are very rigorous. They do require, you know, a lot of work, a lot of discipline. And, therefore, many of the students were staying after school or maybe doing lab hours, and that caused the students to get home late. And being in the Latino culture how we are very protective of our children, the parents would get on the student's case, you know, statements such as, you know, where are you? Are you going out with someone? And so sometimes I think this is one of the challenges, I think, that we have, I think, from a cultural perspective that makes it hard for students to go into this field. Now, we do have other challenges, I think, and I'd like to maybe have the panel maybe talk about from their own experience, what is it that they're seeing as obstacles into this field? If we -- I guess we can start with ladies first. Sorry about that.

>> Sure. Buenas tardes. First, I want to say hi to the puente students here from San Diego City College. Bienvenidos [applause]. Yeah! So let me do something before I actually talk about that. If you have a cell phone, raise your hand. Okay. If you've been to a doctor and they've used this contraption, apparatus, machinita to do something to you, raise your hand. You have a computer at home, raise your hand. Okay. All of that is science, technology, engineering and math. So what we're all about is educating and motivating you to really believe that you have the right and the capacity to be the innovators that create those cool phones, those computers and some really cool technology today. That's what really what it is that we're talking about. So to your point, part of it is educating ourselves about what STEM is and the resources that exist. There

are scholarships. There are mentors. There's a society of Hispanic Professional Engineers. And we're all about not only guiding you but also encouraging and educating your parents so that they can help support you to be able to apply for college and to be able to succeed when you get to that point. So I would tell you that, for us, it really is about each and every one of us in this room going out into our communities, back to your schools and educating our community about the fact that we have incredible capacity to be the innovators of tomorrow and that there are resources there; and to the parents, that there are organizations like ours that really want to encourage them to guide you and support you, get scholarships, be able to end up in college, go through the process of actually succeeding in your classes and being able to surround you with the support. We have 10,000 members throughout the United States. We have chapters at universities, and we have professionals. But here's the thing. We've also have an initiative to create 150 chapters at high schools because we know that, if we begin to work with you as a very young age, and your chavelitos and chavelitas en la casa [phonetic], I know you have brothers and sisters, have them look up SHPE because there's probably going to be a chapter in your area. But it's all about education and awareness. We don't know what we don't know. So if you're in this room, I'm going to ask you -- and if you're watching us online, I'm going to ask you please help us educate the community because we have brilliant students. We just don't know what the options are.

>> Thank you. Jessica --

[ Applause ]

Jessica, you're in the trenches as a math teacher. And I think you see this perhaps, you know, every day. So can you maybe elaborate on some of the challenges that you're seeing?

>> One of the main challenges that I see in my classrooms is not believing in ourselves. We have the capacity. We have the ability. We have everything. We have the richness of our culture to succeed and do whatever it takes to complete whatever challenges we have to come through. And believing in ourselves, it's one of the most important things that we have to remember. We can do it. However, we have to remember that it's only through hard work, dedication, studying, reaching out, asking for help, whatever it takes, taking ownership of your learning. It is important that, when you go to the classroom, you take ownership of that learning and appreciate every single thing that you're learning. Do not waste your time. Every single minute of the -- in the classroom, every instructional minute is important. You're learning every minute, every single step of the way. Being here, you're learning from every single one of us. Take appreciation of those moments. Take -- be accountable for yourself. Take ownership. And that's one of the challenges that I see. Some of us don't take that ownership. We want those fun classes. We want those easy classes. But, you know, yes, you can have fun. Yes, you can do all those things. But, also, how much am I taking in? How much am I learning? That's very important. And I think that's one of our challenges in the classrooms.

[ Applause ]

>> Thank you, Jessica. And I think now it's my colleague's turn to -- maybe Marvin, if you can start.

>> Sure. Good afternoon. Good afternoon, everyone. It's still morning. Good morning, everybody. It's good to see all of you. So let me let me talk about some of the challenges. You know, as I was looking at the video, there was some information that just stood out in my mind. One is it stated that only 700 of our students are going into the STEM areas or majoring in a number of our STEM areas. And out of the 75 -- out of the 700, only 75 are actually transferring. So let me first start with the 700 number and just think about that. Our campus, we serve over 50,000 students a year. So who are the math majors here? So what's 700% -- what's 700 out of 50,000? That's not very much. So just to take that even further, our biggest feeder schools, schools like Garfield High School, Roosevelt High School where 95 plus percent of the students there are Hispanic, you know, it's just not a large number, let alone the number of students who are transferring. Now, for those who do come to East LA college from some of those local high schools, it generally takes them three to five years to graduate from East LA College. So just think about that. And why is it taking them so long to graduate from East LA College? Well, one is, when they're coming to us, they're not coming prepared to be able to take college-level courses. We have a number of students who come to us testing in fifth grade math. Just think about that. They're testing in fifth grade English. So in order for a student to be able to transfer, they've got to go from fifth grade to college level, and it takes them three to five years to do that. It's a long time. A lot of things can happen in three to five years. As many of us say, life happens. And as a result, many of them don't graduate. So that is no doubt a challenge that we have to take on. We have to do that because, unless we take on that challenge, that 700 number will not increase. It may increase a little bit here and there but not to the numbers that I want it to increase. So as a college president, I want all 50,000 students to transfer, not 700. So what can I do to increase that number? And we'll get more into that a little bit later on. But, again, you know, the challenges are huge. And they require drastic changes, not just a little change here. Now, what we do in education, for many of my colleagues who are here in education, we're good at developing boutique programs. We're really good at serving 30 students here, 40 students there. That's good. But it's not going to help the masses. And so today, you know, we are -- I am going to talk about what we're doing about that. So I'm happy as to what we're doing. And you saw that in the video. But the last thing you want to have as a college president is to be happy what you're doing. You always want to continue improving. So I'll get more into that as to what we're going to do.

>> Thank you, Marvin. Emanuel, you want to say a few words?

>> Sure. Thank you all for inviting me and good morning as well. And good morning to all the -- everyone who's watching via Livestream, which I think is pretty cool and the use of technology already. And it's pretty amazing that we're doing this, and I think that what you're hearing from each other's voices here is that we're all very passionate about

this. And we need that attitude, that relentless attitude to do something about it. You've heard the numbers. You know, STEM careers are in high demand. In fact, this country is importing talent from abroad to fill STEM careers when we have millions of young Latinos out there that can -- Latinos in general that can fill those careers today if they just want to focus on it. And I think it's our responsibility in this room to take it upon ourselves to make a difference. And there's -- there are countless ways to do it, from joining SHPE or engaging with East LA College on some of the programming they're doing. I'm the chairman of the Hispanic Heritage Foundation. We actually do what we call coding jam sessions in schools across the country. We just finished doing one in Chicago yesterday. We did one in Maryland the day before -- two days before that where we're teaching middle school kids and high school kids how to learn computer programming, which is the T of the STEM, right? Actually, it's the E as well because it's software engineering. And those are some of the things that we could be doing. I work at a technology company where I do business development and strategy, and it's one of the only Latino-owned venture-backed startups in the country. And we have created a tool to help teachers get access to thousands of books at their fingertips so they could assign their students to target the literacy crisis. That was only possible because there were three Latino engineers who got together with another Latino who was passionate about education. They were all English language learners. And they created a platform that was going to help people like them. When you get folks like us creating these technologies, they're going to be more relevant to our community, and that's what we need to be doing. So I can go on and on. At the end of the day, STEM careers are here to stay. They're in high demand. They pay more than most of the careers, especially the technology careers are the fastest growing. And we're the fastest growing population, so we need to fill those careers.

[ Applause ]

>> Emanuel talked a little bit about some of the -- those strategies that are being done. But now we want to engage into a discussion of, you know, what it's working right now, what it's being implemented that it's making a difference in changing the statistics that we have at the moment. So we'll start with the ladies. If you can, maybe talk about what is being done in your institutions to improve the numbers.

>> Sure. Absolutely. At Coachella Valley Unified School District, we are -- our model right now is college career and citizenship ready. We are providing staff developments for all of our staff members to provide those opportunities for our students. We are currently finishing up providing 20,000 iPads to every single one of our students starting from K, K-12. And I think it's an amazing opportunity that we're giving to our students to give them the tools that are necessary. And with that, we also have the staff developments provided to our teachers to make sure that they are actually using those tools creatively and give those pathways to the STEM system that we are currently enforcing.

>> I would say that, you know, why are we in this room? A few years back, those that were in the '60s knew that there was a civil rights and we wanted derechos as Latinos.

And they kept talking about this sleepy giant that was going to be coming in numbers and in buying power. We were buying cars and TVs and computers. But today we're really talking about economic justice. And what do I mean by that? The fact of the matter is that jobs in science, technology, engineering and math are really good paying jobs. They're steady jobs. And there are more corporations that are looking for talent than we have the individuals to fill those jobs. So, for us, it's about really getting excited. We're talking about education and advocacy today. We need to advocate for our community to be the ones that have the skill set that have the access to the colleges to get those really good paying jobs because we have the capacity. We're so large in numbers, we need to have the same percentage and growth to the individuals in our community to get the college education in STEM and to get those jobs. So now we're talking about economic justice. For all of us, we really need to work together. That's one of the things that our organization does very, very well. We have a network of 341 chapters across the United States. And what we're doing is we realize that there are a lot of corporations that have very good paying jobs in STEM. But unless we got our Latino students to graduate from high school, they wouldn't be there available to take those jobs. So we are creating those chapters at the high schools. We're encouraging our members to mentor you to get better at math and get better at engineering. And we're working very, very closely with the corporations to help us educate our community and make sure that they have access to it. So, for you, what does that mean? That means that we have mentors. That means we have scholarships. That means we have individuals that can help your parents fill out college grant applications. We're really a resource to you. So I want you to get really excited about the fact that we deserve to be the ones that are the innovators of tomorrow. But to do that, we have to really work together to get our young students to be math ready and to really have the skill sets to compete for those positions.

[ Applause ]

>> Thank you, Pilar. Marvin, you've been working on a very innovative program at East LA College that I think is going to make a huge difference. Can you please tell the audience a little bit about what the program is?

>> Sure. As you recall, earlier, I was talking about the -- you know, what do we do now, and how do we really increase the number of students that can come to us prepared? So back in July, we began getting together with a number of the regional educational partners in our area. That included the President of Cal State LA, the principals of some of our local high schools and some of the school board members from our local school districts. The purpose of the program was, you know, what can we do now to work together to increase the number of students that can come to the campus, not just the numbers but come college-ready and come prepared so they can take college-level courses. And we know that the way to do this is that we can't just start talking to the seniors at high schools that we always do, but we have to start as soon as the first grade. So we came up with a program that is approaching it as a pathway program, looking, in essence, almost like a cradle to career program where we're working with all the high school -- all the schools and elementary schools, all these junior high schools,

as well as our local high schools and, in essence, creating a college going culture starting from the first grade and creating a vision where every young child that goes from the first grade and middle schools, we create a pathway there where they're going to go to college. And so we have established a program where we're doing it. We are now working with many of our elementary schools. We're working with a number of our junior high schools and our high schools. We're offering many of our courses at those levels, specifically starting with the junior high schools in math, English, theatre arts, humanities. We've created pathways, a remedial pathway for those students who need remedial courses to those students who are high achievers. The goal of this program is, again, for us to provide the educational support from tutoring -- in addition to courses, we're offering tutoring. We have parent academies. We are coming together with the business community, community based organizations. And we're all coming together in order to create and enrich those pathways so that the outcome of the program is that, when those students get to become seniors, they're ready to go to college. And instead of taking them through the five years at East LA College to graduate, now it's going to take them two to three years. When we do that, I guarantee you one thing. Our transfer rates will increase. Number two, they'll be able to transfer even more prepared to a campus like Cal State LA. Cal State LA is guaranteeing transfer to these students, specifically to the students to graduate from these high school. So if they graduate and apply to Cal State LA and meet minimum qualifications, they'll be accepted to Cal State LA. For those students that go into East LA College and then they transfer to Cal State LA, they'll also be guaranteed transfer, as long as they meet minimum qualifications. So there's an outcome. There's a reward. Again, we have to do this. We can't take the approach any longer of just working with the seniors on senior day and thinking that's what we have to do.

[ Applause ]

>> Emanuel, if I could just say something. So Emmanuel and I are both in IT, so I think we may have a bias for the T in STEM.

>> It's the highest paid [laughing].

>> There are a couple of [laughing] -- there are a couple of stats that I think I would like the audience to know, and that is, according to the Bureau of Labor Statistics, 50% of STEM jobs by 2020 are going to be in computing. Also 62% of the newly created jobs in STEM will be in computing as well. By the way, computer jobs pay a better salary than - better than the average salary of all 50 states. So with that being said, I think one of the challenges that we have is that sometimes for our kids, IT, it's not sexy. You know, it's not something that kids get into. So maybe Emanuel, if you can elaborate a little bit on what can we do to get more kids engage in IT?

>> Sure. So I'm going to rattle off a bunch of things here. But one thing that the nonprofit that I chair, the Hispanic Heritage Foundation, our principal initiative is LOFT, which stands for Latinos on Fast Track or Leaders on Fast Track. And we have a website, loftinnovation.org, l-o-f-t innovation.org. You'll find all the opportunities on

there. And from there, you can actually join our own social network, proprietary social network that we had our own members create, which is kind of cool for Latinos and friends. And that's loftnetwork.org. But from LOFT Innovation, you can join it. Specifically in technology, we just finished with one of our partners. Savio is the name of the school, the developer bootcamp that we did. The first cohort that went through this developer bootcamp, 50% of them after they learned the core skills of software engineering -- so they didn't have to do two years. They did four months of intensive software engineering training. Fifty percent of them had jobs, literally job offers when they finished the training, job offers. When they started, they didn't know anything about computer programming. Okay. The other 50% all have a handful of interviews with a bunch of tech companies in the greater LA area. That's how stark it is, and that's how big the need is. What are we doing in terms of programmatically, we're doing those coding jam sessions to introduce computer programming to middle school and high school students, the boot camp. We have STEM symposia. In fact, we did one here a few months ago, but we were doing them in 15 markets across the country. And we need to do those things. But if I would kind of try to sum it up into two things, it's exposure and then the actual work. And the exposure is all that programmatic content. But I would say with that proprietary social network that we created, LOFT Network, today, any Latino in the country can log into that network and have a few 100 Latinos in STEM careers answer questions. So there's no more excuses about not having access to someone that you weren't exposed to because a lot of us, when we were younger, we were not exposed. We didn't have an uncle or parents that were in the engineering or STEM fields. Now, for that social network today, you can access a few hundred STEM folks and ask them questions. Okay. On the actual content and learning, aside from the boot camp and these coding jam sessions, today on code.org or Khan Academy or a bunch of other platforms like Coursera, you have access to this content. Before, it was really hard to get these curricula and find out how to actually learn. For free, you can learn a lot of this stuff. And so all of you are agents and need to share those resources with every person who is interested at all in STEM so that we can embark on these STEM careers.

>> Thank you, Emanuel.

[ Applause ]

And our time is running out. But we do have an opportunity for one question, just very concise. Anyone from the audience?

>> Somebody --

>> Oh. We have ones lined up. That's what lights do to you. Yes, please. Go ahead.

>> My name is [inaudible]. This fall I'll be attending [inaudible] civil engineering.

>> Yay! Bravo!

[ Applause ]

So you need to join the SHPE familia.

>> My question is, now that I'm transferring to a four-year school, I don't really have that much money [inaudible]. So I wanted -- my question to you was, what are some scholarship opportunities for [inaudible] people in STEM?

>> From my perspective, your timing couldn't be any better because we have right now in the process of accepting applications for scholarships. Our corporate sponsors give us money to provide you the funds to pay for school, for books, for all of that. So we give scholarships to high school students and to students that are in the University. But I'll also take the opportunity to say, get with the SHPE program at your campus. There's a chapter there that's going to support you, that's going to mentor you, that's going to open up doors, that's going to help you study. Our whole objective is, when you get there to San Francisco State University, that you succeed. And we'll take you under our arm and tell you about other scholarships and tell you about other resources. We have a phenomenal series of conferences in different regions and the biggest national technical conference for Latinos. So now as a SHPE member, when you go to the University, you're going to have access to a whole bunch of opportunities. There are several organizations that are committed to Latinos in scholarships. And if you come to our website, we'll list a lot of them to you. But there are definitely -- there's funds out there for you.

>> And we have a website that has those resources as well. The Spanish Scholarship Fund is the largest scholarship organization out there. CCI has a good database as well of scholarships. So they're out there. But I would say, even if you don't get that many scholarships, you've got to go and you've got to do it. And if you've got to take loans, you've got to do it because the STEM careers are such in high demand and they're going to pay you a lot more money than almost any other career out there. And you've got to do it because then you'll be able to finance other people and give scholarships yourselves. And I think what we have found, a lot of Latinos who go through STEM careers, they are the ones that are contributing to scholarship organizations and creating more of them. So we need to kind of create that virtuous cycle to be able to fund ourselves and our community.

>> Thank you. With that, I'd like to bring our session to an end. We will be available afterwards if you would like to connect with us. But thank you again for the opportunity.

*END – 00:31:46*