STEM forum focused on access

Foro STEM enfocado en el acceso

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The goal? Fill the gap.

The City College of New York (CCNY) hosted a conference from May 23 to May 25 to explore ways to increase Hispanic representation in STEM (science, engineering, technology and mathematics).
HSI: Urbano, sponsored by CCNY in collaboration with La Guardia Community College, Borough of Manhattan Community College, University of Texas-El Paso and the Caribbean University of San Juan, convened industry and academic leaders to review and address factors that might limit an underrepresented student’s ability to succeed in STEM disciplines at urban Hispanic Serving Institutions (HSIs).

Conference coordinator Jorge González-Cruz, a CCNY mechanical engineering professor, noted that Hispanics are the fastest growing population in the U.S., and technology is rapidly changing, yet Hispanics only receive eight to nine percent of all STEM degrees nationally and make up only seven percent of the STEM workforce.

“We’re not keeping pace with the rapid changes,” he said. “We need to close that gap.”

The conference featured a series of panel discussions to examine the nature of the issues from the perspective of college administrators, employers and students.

González-Cruz said the panel examined reasons for the low number of STEM degrees obtained by Hispanic students and found that many of them do enroll in college to study STEM careers but end up dropping out.

“We found that Hispanics do enroll at about same rates as the general population,” said Gonzalez-Cruz. “However, low retention rates result in low yields.” He said some of the main causes were determined to be a lack of math preparation, financial resources, lack of role models and language barriers.

The event also explored ways to improve Hispanic student achievement and work-readiness by leveraging technology in the classroom, using social media to build community and improve access to services, and promote experiential learning.

At a wrap-up session for the conference, City Councilmember Mark Levine noted that New York City is now the number two location in the United States for tech jobs, following Silicon Valley, but lamented that a large number of those jobs were going to people from outside of New York City.

“There’s no shortage of ability. There’s a shortage of opportunity,” he said.

“It’s frustrating because the jobs are there; we’re not ready to fill them,” said Manhattan Borough President Gale Brewer. “It is necessary to do so in the Latino community. The talent is here.”

Held at the Advanced Science Research Center at CCNY, the event was funded by the National Science Foundation (NSF).

“This is a critical issue for the NSF,” said Joan Walker, NSF Program Director, who conducted a grant writing workshop at the end of the conference. “We are looking forward to the conference and to considering the proposals that will undoubtedly emerge from it.”

González-Cruz said one of the solutions that came out of the conference is to use more technology in the classrooms for younger kids to stimulate interest in STEM.
“Experiential learning, our kids need that connection with what they’re going to do in a career,” he said.

“We have to invest significant resources and time to bringing the students to bear,” he added. “The more we can do in K through 12 the better.”

Part of the discussion at HSI: Urbano centered on the lack of math preparation in younger grades, which panel members said has roots at the K through 12 level. “A key factor is that there are not enough teachers in STEM,” said González-Cruz. “One can arguably make the case that to keep with the pace of need for STEM teachers, online material to train teachers will be needed.”

Proven online tools that make use of open sources resources for entry level college math and sciences courses were also recommended as supplement resources for students that may lack preparation.

“Sharing these resources among colleges and faculty is important,” González-Cruz said. One recommendation is proposed at the conference was for state and federal agencies working together with the private sector support the creation of “Resource Hubs” for online STEM material for K-12 and for entry level STEM courses. These resourced could be used to train K-12 STEM teachers.

Other factors contributing to lack of STEM degrees for Hispanic students were determined to be a lack of role models and no sense of belonging at college campuses.

González-Cruz said the goal of HSI: Urbano is to generate specific solutions and recommendations that can be implemented in urban colleges.

He said the conference could become an annual or bi-annual event.

“This is putting together the agenda, and we’re going to have to go back and check ourselves how the agenda is working out, how we move forward,” he said.

For more information, please visit hsiurbano.ccny.cuny.edu.