

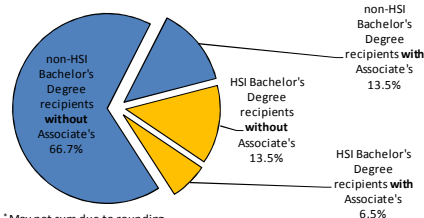
Pathways to STEM Bachelor's and Graduate Degrees for Hispanic Students and the Role of Hispanic-Serving Institutions

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Abstract

Utilizing the concept of "transfer agents," developed by Bensimon and Dowd based on Stanton-Salazar's sociological depiction of institutional agents, this study demonstrates the ways in which administrators, counselors, and faculty can help Latina and Latino community college students navigate transfer pathways to obtain a bachelor's degree in science, technology, engineering or mathematics (STEM). Nearly 90 interviews were conducted with administrators, faculty, staff and students at Hispanic Serving Institutions (HSIs) in order to document the roles of institutional agents and the institutional characteristics that support transfer from a community college to the STEM baccalaureate for Latina and Latino students.

Latino STEM Bachelor's Degree Recipients, Graduates of HSIs and Non-HSIs, by Associate's Degree Completion



* May not sum due to rounding.
 Source: Analysis of the NSF 2003 National Survey of Recent College Graduates (NSRCG). Weighted N=61,233

Twenty-five Potential Exemplars for Latino STEM Education

Institution	# STEM Degrees Awarded to Hispanics	% Hispanic Enrollment	% Hispanic STEM Enrollment	% STEM Degrees Awarded to Hispanics
College of the Southwest, NM	5	36.90%	47.60%	50.00%
Saint Edward's Univ. TX	40	31.40%	37.70%	29.00%
Univ. of Texas-Permian Basin, TX	32	37.50%	42.60%	32.70%
St. Mary's University, TX	118	69.30%	72.60%	69.80%
Univ. of the Incarnate Word, TX	43	59.30%	62.50%	55.80%
Univ. of La Verne, CA	38	35.80%	39.10%	36.90%
Our Lady of the Lake Univ. San Antonio, TX	68	77.10%	80.10%	78.20%
Univ. of Texas at San Antonio, TX	357	42.60%	45.50%	43.80%
Florida International Univ. FL	613	60.40%	62.80%	57.80%
Texas A&M International University, TX	90	90.40%	92.30%	96.80%
Barry Univ. FL	78	30.80%	33.50%	35.90%
Saint Thomas Univ. FL	19	45.60%	46.20%	47.50%
College of Mount Saint Vincent, NY	17	30.40%	30.40%	42.50%
New Mexico State Univ.-Main, NM	217	44.00%	43.90%	32.50%
Univ. of Texas at Brownsville, TX	133	89.10%	88.60%	85.40%
Univ. of Texas at El Paso, TX	404	74.10%	72.50%	70.40%
Univ. of New Mexico-Main, NM	217	34.90%	32.50%	32.50%
Texas A&M Univ.-Kingsville, TX	185	64.10%	60.60%	52.50%
California State Univ. Bakersfield, CA	73	37.40%	33.80%	30.90%
Univ. of Texas-Pan American, TX	319	87.50%	82.60%	78.40%
Nova Southeastern Univ. FL	79	27.40%	22.10%	25.40%
Mount St. Mary's College, CA	23	69.80%	43.50%	46.90%
Southern Adventist Univ. TX	10	26.00%	19.60%	31.30%
Western New Mexico Univ. NM	11	44.90%	36.00%	36.70%
La Sierra Univ. CA	10	37.40%	20.80%	22.70%

Source: Institutional Postsecondary Education Data System (IPEDS)

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Research Question

What is the Role of Institutional Support and Institutional Agents at Hispanic Serving Institutions in promoting Hispanic Student Educational Aspirations and Attainment in STEM fields?

Institutional Agents

Individuals in education who have the capacity and willingness to support students by providing them with resources and opportunities (Stanton-Salazar 1999; 2001; 2010).

- Help students achieve higher academic outcomes by making them better equipped with information, assistance and assets.
- instructional and programmatic assistance
- support with academic and career decision-making

A Profile from CUE's Latino STEM Access Toolkit Raymond Huerta: Overcoming Resistance

Raymond meets with a middle school principal and the school superintendent, in an effort to recruit their schools into his program. He relies on his strong relationship with the local community college, and his confidence in their transfer program, to make a strong sell for the program.

Source: Interviews with over 90 potential agents at purposefully sampled two-year and four-year HSIs.

An Institutional Broker Is

knowledgeable about available resources and steers Latino students to them, even negotiating agreements with other institutional representatives to ensure students' success.

Sample Indicator: Assumes role of intermediary or broker between students and key campus personnel and services/programs.

Institutional Agent: Self Assessment

If you were Raymond, how would you answer the following questions?

Statement	Frequency							
	Never	1	2	Sometimes	3	4	Frequently	5
I have solid knowledge of how educational bureaucracies operate—e.g., chains of command, identification of key agents in authority and of key gate-keepers								
How do you do this?								
What are the challenges?								
To what extent have you done this specifically for Latina/o students?								

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The CUE Equity Model and Latino STEM Toolkit

Research findings have been applied to the development of a "STEM Toolkit: Tools for Increasing Latina and Latino STEM Baccalaureates," to be featured soon on our website (<http://cue.usc.edu/>). This toolkit is part of the CUE Equity Model and helps both teams and individuals understand the issues facing Latina and Latino STEM students. It identifies how their actions and behaviors affect these students' success and demonstrates techniques agents can use to help students understand the culture of their institution and make effective use of the resources available to them. The STEM toolkit features tools for data-informed decision making and professional development activities, such as profiles of institutional agents with reflection exercises and self-assessment inventories of institutional culture.

Institutional Agent Characteristics

A Knowledge Agent... ...is in a position of power ...provides knowledge pertinent to navigating the system ...knows the system ...questions the system	A Bridging Agent... ...introduces students to key resources ...has a strong social network ...knows what key players do ...opens doors When they take on more they become...
A Networking Coach... ...models key behavior ...knows important and influential people ...teaches others how to meet and interact with key players ...develops relationships with high status colleagues	An Institutional Broker... ...negotiates agreements between two or more parties ...accesses resources on behalf of students ...knows what resources are available When they take on more they become...
An Advisor... ...helps students gather information ...assesses problems in a collaborative manner ...prompts decision making	A Coordinator... ...assesses student need ...identifies resources to address need ...ensures students utilize the resources A Coordinator will have aspects of the Institutional Broker and Bridging Agent.
An Advocate... ...prompts and protects "their" students ...drives students to succeed ...is often ideologically motivated	A Cultural Guide... ...guides students through new social situations ...teaches student to identify key people ...empowers students to interact in social situations and with new people

(Stanton-Salazar, 2010)

Institutional Agent Reflection Exercise

Raymond Huerta as an Institutional Broker

What enables Raymond to negotiate agreements between key stakeholders as he seeks to expand the CSAP program?

What type of knowledge does Raymond possess that enables him to navigate the local school system and neighboring colleges?

How does Raymond rely upon his professional networks in order to access resources on behalf of Latina and Latino students?



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