New York City College of Technology HSI Position Paper

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Introduction
New York City College of Technology (City Tech) is the only college in the City University of
New York (CUNY) system offering career-specific baccalaureate and associate degrees that focus
on technology and professional studies. The college is also unique in that it has the largest
enrollment of STEM students within CUNY and places first among CUNY colleges in the National
Science Foundation's (NSF) rankings of schools that award STEM associate degrees to women,
minorities, and persons with disabilities[1].

City Tech is a federally designated Hispanic Serving Institution (HSI). By definition an HSI is a
not-for-profit degree-granting accredited institution of higher education whose enrollment of
Hispanic students exceeds 25 percent of its total Full-Time Equivalent (FTE) undergraduate
enrollment.[2]

As an HSI that is "committed to providing broad access to high quality technological and
professional education for a diverse urban population,"[3] and in anticipation of the expected growth
in its Hispanic[4] population, City Tech must reflect on its current policies and the culture of the
institution to ensure an atmosphere of inclusion and respect, and meet the needs of Hispanic
students.

City Tech Demographic Trends
City Tech first became eligible for designation as an HSI in fall 1997, with 25.3 % of the City
Tech student population identifying as Hispanic. At the time the total enrollment was 11,124
students, 7,620 full-time and 3,504 part-time. Of those students, 50.5% identified as Black, 25.3%
as Hispanic, 13.6% as White, 10.6% as Asian/Pacific Islander, and 0.1% as American
Indian/Alaska Native[5]. Since then, along with an overall growth in the Hispanic population of New
York City, Hispanic enrollment at City Tech has increased annually as indicated by Table 1 and
Figure 1[6] which present the most recent enrollment demographics and trends (2009 to 2018).   By
the Fall 2018 semester, student enrollment was at 17,278. Among these students, 29% self-
identified as Black (non-Hispanic), 34% as Hispanic, 20% as Asian, 10% as White, 1% as
Hawaiian/Pacific Islander, 1% as Other and 5% Non-Resident.

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[1] National Science Foundation, Women, Minorities, and Persons with Disabilities in STEM. Division of Science
Resource Statistics, special tabulations of IPEDS Completion Survey, updated January 2012.
[2] https://www.hacu.net/hacu/HSI_Definition1.asp
[3] City Tech's mission statement http://www.citytech.cuny.edu/about-us/mission.aspx
[4] We will use the term Hispanic as an umbrella term for Hispanic and Latinx to align with the Hispanic Serving
Institution designation.
[5] CUNY Office of Institutional Research, Student Data Book
http://www.cuny.edu/irdatabook/rpts2_AY_current/ENRL_0019_UGGR_FTPT_HIST.rpt.pdf
http://www.cuny.edu/irdatabook/rpts2_AY_current/ENRL_0026_RACE_TOT_PCT_HIST.rpt.pdf
[6] City Tech's AIRE Office Data Dashboard http://air.citytech.cuny.edu/data-dashboard/enrollment-trends-fall

Table 1 *2009-2018 City Tech Enrollment by Ethnicity with Totals and Percentages*

Ethnicity (IPEDS)	2009 Fall	2010 Fall	2011 Fall	2012 Fall	2013 Fall	2014 Fall	2015 Fall	2016 Fall	2017 Fall	2018 Fall
American Indian or Alaskan Native	41 0.3%	49 0.3%	53 0.3%	60 0.4%	69 0.4%	67 0.4%	68 0.4%	66 0.4%	62 0.4%	54 0.3%
Asian	2,393 15.5%	2,474 16.1%	2,648 16.6%	2,711 16.7%	2,983 17.7%	3,332 19.2%	3,425 19.7%	3,396 19.7%	3,420 19.8%	3,420 19.8%
Black or African American	5,884 38.2%	5,793 37.7%	5,755 36.1%	5,633 34.8%	5,465 32.4%	5,344 30.8%	5,260 30.2%	5,129 29.7%	5,047 29.2%	5,010 29.0%
Hispanic/Latino	4,046 26.3%	3,996 26.0%	4,316 27.0%	4,613 28.5%	5,175 30.7%	5,473 31.5%	5,573 32.0%	5,729 33.2%	5,826 33.7%	5,937 34.4%
Native Hawaiian or Other Pacific Islander				64 0.4%	76 0.5%	104 0.6%	77 0.4%	81 0.5%	58 0.3%	50 0.3%
Nonresident alien	837 5.4%	799 5.2%	769 4.8%	702 4.3%	773 4.6%	775 4.5%	829 4.8%	809 4.7%	824 4.8%	805 4.7%
Two or more races				93 0.6%	142 0.8%	166 1.0%	177 1.0%	178 1.0%	222 1.3%	237 1.4%
White	2,198 14.3%	2,255 14.7%	2,420 15.2%	2,331 14.4%	2,177 12.9%	2,113 12.2%	2,015 11.6%	1,894 11.0%	1,820 10.5%	1,756 10.2%
Grand Total	15,399 100%	15,366 100%	15,961 100%	16,207 100%	16,860 100%	17,374 100%	17,424 100%	17,282 100%	17,279 100%	17,269 100%
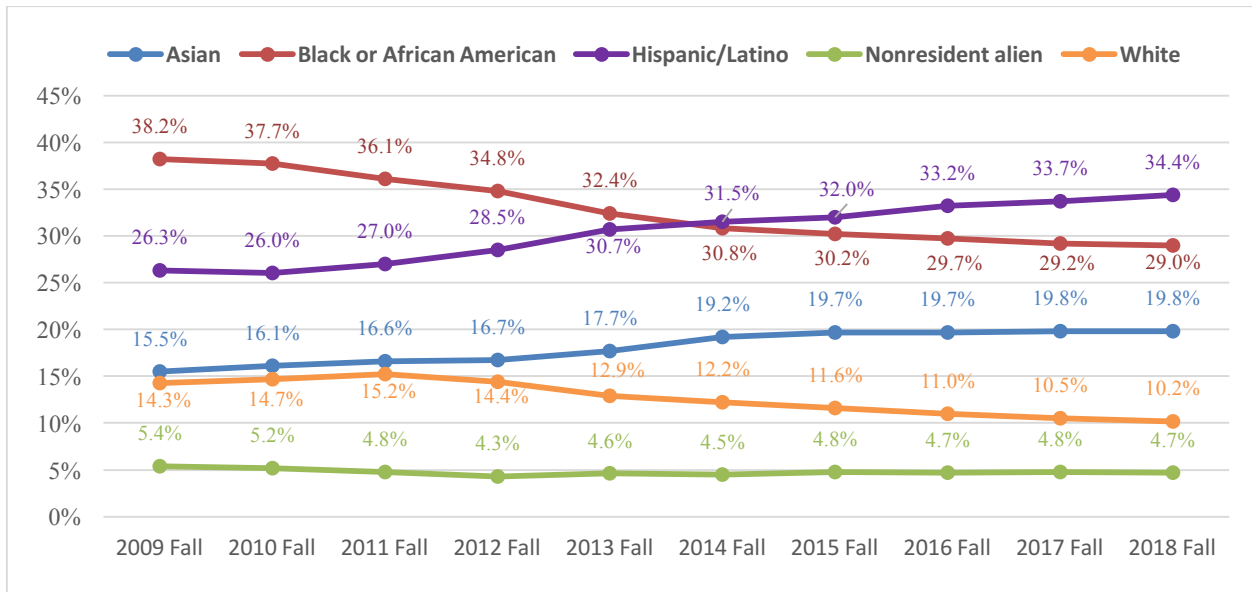
Figure 1 *2009-2018 City Tech Enrollment Trend by Ethnicity*

City Tech plays a critical role in providing educational opportunities for Hispanic Students. Table 2 provides the enrollment of Hispanic students by department, it is evident that Hispanic students make up at least 25 % of the student population in each department. In the Fall 2018 semester, out of a total of 5,937 Hispanic Students, 2,826 were STEM majors, about 47.8%. Enrollment data indicates that the majority of women enrolled in STEM majors are Hispanic. In fall 2018, out of a total of 7,633 female students enrolled at the college, 1,996 of the female students were STEM majors with the following ethnicity: 34.5% were Hispanic, 25.5% Black or African American, 22.6% Asian, and 10% White.

Table 2 *Fall 2018 Hispanic Enrollment by Department*

Department	Hispanic Enrollment (%)	Department	Hispanic Enrollment (%)
Biological Sciences	25.2	English	41.7
Architectural Technology	42.3	Advertising Design and Graphic Arts	41.1
Computer Engineering Technology	35.8	Dental Hygiene	35.3
Computer Systems Technology	30.7	Human Services	35.6
Construction Management and Civil Engineering Technology	32.5	Nursing	24.1
Electrical and Telecommunications Technology	29.2	Radiologic Technology and Medical Imaging	34.7
Entertainment Technology	43	Vision Care Technology	25
Environmental Control Technology	32.8	Humanities	-
Mechanical Engineering Technology	36.4	Library	-
Business	37	Mathematics	32.9
Hospitality Management	39.2	Chemistry	31.6
Law and Paralegal Studies	33.6	Physics	28.6
Career and Technical Teacher Education	38.2	Social Science	-

The graduation and retention rates among Hispanic students are lower compared to those of other City Tech students. The six-year graduation rates for the 2011 Fall Cohort are given in Table 3, this data is representative of the last decade at City Tech. The table indicates that Hispanic students attain their associate degrees at a comparable rate to all students; however, the six-year graduation rate for bachelor's degrees indicates a greater gap: the completion rate for Hispanic students is less than half of the overall rate. Although the number of bachelor's students is low, Hispanic students represent a large segment; however, the rate of successful completion is less than half of the overall rate. The number of baccalaureate students is substantially higher now, and it will be important to look at trends in the enrollment and progress of Hispanic students.

Table 3 *Graduation Rates for Associate and Bachelor's 2011 Fall Cohort*

	Associate Degree				Bachelor Degree			
	All students		Hispanic students		All students		Hispanic students	
Total number of students in cohort	2,764		923		187		74	
	number	percent	number	percent	number	percent	number	percent
Graduated in 2 Years	30	1.1	4	0.4				
Graduated in 3 Years	229	8.3	69	7.5				
Graduated in 4 Years	497	18.0	151	16.4	2	1	1	1.4
Graduated in 6 Years	1,115	40.3	343	37.2	49	26.2	9	12.2
Students not considered completed	893	32.3	356	38.5				

The one-year retention for first-time full-time associate degree-seeking freshmen entering college with no prior college credits are given in Table 4. The data indicates that Hispanic students are persisting in the first year as much as all students, however graduation rates are less than half which indicates there is a significant disruption after the first year. There are many contributing factors to student retention and graduation that should be identified.

Table 4 One-year Retention Rates for Associates Degree students, 2017 Fall Cohort

	All students	Hispanic students
Total number of students in cohort	2,195	777
Overall One-year Retention Rates	52.8 %	49.5 %
Retained in Initial Program within City Tech	37.1 %	34.7 %
Retained in Another Program within City Tech	15.8 %	14.8 %
Retained at Another CUNY College	7.7 %	6.7 %
Not Retained within CUNY	39.4 %	43.8 %

US Hispanic Population Growth Trends

In 2015, Hispanics made up 18.2% of the population in the United States.[7] In 2017, the US Census reported that New York had the 4th largest Hispanic population in the United States.[8] Moreover, there are 234 identified Hispanic-Serving School Districts (HSSD) in New York and 123 emerging HSSD. HSSD are districts with 25% or more Hispanic student enrollment. Population trends suggest not only that City Tech can expect to maintain HSI designation, but should expect an increase in representation. The Hispanic student population within City Tech is likely to continue to be predominant in numbers into the foreseeable future. Indeed, in 2014-2015 the top five institutions for enrolling Hispanic undergraduates were all CUNY schools and designated HSIs.[9]

Representation of Hispanics among City Tech Administration, Faculty, and Staff

Since Fall 2006 there has been a net increase of about 33% in the number of full-time faculty: from 304 members in Fall 2006 to 393 in Fall 2017. As of 2019, the City Tech fact sheet reported 401 full-time faculty, as well as, 1,100 part-time faculty.[10] Table 5 provides the distribution by ethnicity of City Tech employees in administrative, faculty, and staff positions. The data indicates that about 12% of those in administration are Hispanic and about 8% of faculty are Hispanic. Table 6 shows the number of Hispanic faculty by department since 2010.

Table 5 City Tech Employees by Ethnicity and General Classification, 2017-2018[11]

	Administration *		Faculty		Staff **	
	number	percent	number	percent	number	percent
White	32	41.6	240	61.1	73	16.6
Black/African-American	27	35.1	48	12.2	209	47.6
Hispanic/Latino	9	11.7	32	8.1	113	25.7
Asian	9	11.7	73	18.6	44	10.0
Total	77	100.0	393	100.0	439	100.0

*Administrative includes personnel in Executive, Administrative, or Managerial positions.

**Staff includes personnel in the following categories: Professional Non-Faculty, Administrative Support Workers, Craft Workers, Technicians, Service Workers and Others, CLT.

[7] https://www.hacu.net/hacu/HSI_Fact_Sheet.asp

[8] U.S. Census Bureau, Annual Estimates of the Resident Population by Sex, Race, and Hispanic Origin for the United States, States, and Counties: April 1, 2010 to July 1, 2016, PEPSR6H, Release Date: June 2017; Retrieved August 2017, www.census.gov.

[9] Excelencia in Education analysis using: U.S. Department of Education, National Center for Education Statistics (NCES), Integrated Postsecondary Education System (IPEDS): 2014-2015 Enrollment data, National Center for Education Statistics (NCES), U.S. Department of Education

[10] http://www.citytech.cuny.edu/about-us/docs/facts.pdf

[11] http://www.citytech.cuny.edu/compliance-diversity/docs/Affirmative_Action_Plan_2018_2019.pdf

Table 6 *Number of Hispanic Faculty by Department, 2010-2018*[12]

	Faculty							
	2010		2012		2014		2018	
	Hispanic	Total	Hispanic	Total	Hispanic	Total	Hispanic	Total
Biological Sciences	0	23	1	19	0	19	0	22
Architectural Technology	0	17	1	15	2	17	3	20
Computer Engineering Technology	1	11	3	12	3	11	6	30
Computer Systems Technology	2	19	2	15	2	14		
Construction Management and Civil Engineering Technology	-	-	1	6	1	6	1	41
Electrical and Telecommunications Technology	0	12	0	12	0	13		
Entertainment Technology	0	10	0	10	0	11		
Environmental Control Technology	-	-	0	3	0	3		
Mechanical Engineering Technology	0	5	1	7	0	8		
Business	1	12	1	11	0	10	3	27
Hospitality Management	0	18	0	13	1	15		
Law and Paralegal Studies	2	8	2	7	1	6	1	7
Career and Technical Teacher Education	0	7	0	4	1	4	-	-
English	2	40	3	33	3	36	2	36
Advertising Design and Graphic Arts	3	24	2	21	2	19	3	16
Dental Hygiene	0	18	0	16	0	18	5	55
Human Services	3	11	3	10	3	9		
Nursing	1	23	2	20	2	19		
Radiologic Technology and Medical Imaging	0	7	0	7	0	8		
Vision Care Technology	0	5	0	2	0	4		
Humanities	2	15	1	13	2	14	2	15
Library	0	13	0	13	0	14	0	13
Mathematics	1	46	1	38	2	43	2	41
Chemistry	0	6	0	6	0	7	0	20
Physics	1	13	1	12	1	15		
Social Science	1	27	1	23	2	25	2	26

[12] New York City College of technology, 2013-2014 and 2018-2019 Affirmative Action Plans.

HSI Designation and Benefits

As a federally designated HSI, City Tech is eligible for grant funding from the U.S. Department of Education (USDE) and the National Science Foundation (NSF). The HSI Division of the USDE provides grant funding to institutions of higher education to assist efforts to strengthen institutional programs, improve facilities, and develop services as well as to expand the educational opportunities for Hispanic Americans and other underrepresented populations. There are two types of grant programs offered to HSIs by the USDE: Title III and Title V. The Hispanic-Serving Institutions - Science, Technology, Engineering, or Mathematics (HSI STEM) and Articulation Programs (Title III), aims to: (1) increase the number of Hispanic and other low-income students attaining degrees in the fields of science, technology, engineering, or mathematics; and (2) to develop model transfer and articulation agreements between two-year and four-year institutions in such fields. The Developing Hispanic-Serving Institutions (DHSI) Program (Title V) provides grants to assist HSIs in expanding educational opportunities for, and improving the attainment of, Hispanic students. These grants also enable HSIs to expand and enhance their academic offerings, program quality, and institutional stability. The NSF Improving Undergraduate Education: Hispanic Serving Institutions (HSI) Program focuses on enhancing the quality of undergraduate STEM education at HSIs and seeks to increase the retention and graduation rates of students pursuing associate or baccalaureate degrees in STEM. In addition, the HSI Program seeks to build capacity at HSIs that typically do not receive high levels of NSF grant funding. Table 7 lists the HSI grants awarded to City Tech since 2010.

Table 7 HSI Grants Awarded, 2010-Present

Project Title	Date	Program	Amount
National Science Foundation			
Building Capacity: Enhancing Undergraduate STEM Education by Enhancing Transfer Success	2019	National Science Foundation Improving Undergraduate STEM Education	$1,499,767
REU Site: Research Experience for Undergraduates in Satellite and Ground-Based Remote Sensing at NOAA-CREST: Expanded Opportunities	2016	REU Site *Reginald Blake*	$607,580
US Department of Education			
"Digital Pathways" Title III HSI-STEM and Articulation Grant (lead partner BMCC),	2016	Hispanic Serving Institution (HSI) program of the Office of Postsecondary Education at the U.S. Department of Education, #P031C160132, $6M ($713K earmarked for City Tech)	$713,000
Opening Gateways to Completion: Open Digital Pedagogies for Student Success in STEM	2015	Title V Cooperative Arrangement *Jonas Reitz*	$3.2M
Curricular and Strategic Changes in Mathematics and Computer Science to Enhance STEM Education	2015	Minority Science and Engineering Improvement (MSEIP) *Sandie Han*	$736,438
A Living Laboratory: Revitalizing General Education for a 21st-Century College of Technology	2010	Title V—Strengthening Hispanic Serving Institutions *Jonas Reitz, Maura Smale, Matthew Gold*	$3.4M
NASA			
New Horizons in Space Additive Manufacturing and STEM Education	2016	EONS-2014/MUREP (MOO) *Gaffar Gailani*	$453,129
Achieving Proficiency in Engineering Research and STEM Education through NASA Initiatives	2010	CIPAIR *Gaffar Gailani*	$145,703
National Endowment for the Humanities			
A Cultural History of Digital Technology	2016	Humanities Projects at Hispanic Serving Institutions	$99,998

		Anne Leonhardt	
Making Connections: Engaging the Humanities at a College of Technology	2014	Faculty Development at High Hispanic Enrollment Institutions (HHE) *Geoff Zylstra*	$99,958
Comparative Perspectives: Illness, Health and Healing	2013	Faculty Development at HHEs *Mary Sue Donsky (Barbara Grumet)*	$74,986
Water and Work	2008	Faculty Development at HHEs *Richard Hanley*	$29,959
Retentions and Transfigurations: Social Change and Technological Progress in Five NYC Neighborhoods	2006	Faculty Development at HHEs *Marta Effinger-Critchlow*	$30,000

Hispanic Serving Institution Forum

In Summer 2018, a conversation between three Hispanic faculty concerning the lack of Hispanic identity at City Tech led to the conception of the Hispanic Serving Institution (HSI) Forum which took place on September 21, 2018. The forum included a keynote speaker, a panel consisting of City Tech faculty, a facilitated discussion among attendees, and a poster session featuring Hispanic faculty and student research. The purpose of the forum was to collect ideas from faculty, administration, staff, and students which could cultivate future projects and/or collaborations to promote City Tech as a Hispanic-Serving Institution and improve Hispanic student retention and graduation rates.

To establish a baseline for what attendees understood about HSIs, forum participants were asked to respond to the question "What does it mean to be a Hispanic Serving Institution?" Overall, participants understood an HSI designation to mean that the institution had "a certain number of Hispanic students." There was also the understanding that such institutions would, as a result of the HSI designation, respond to Hispanic students by assessing their needs and tailoring services accordingly as well as "focusing on retention and success."

Participants were also encouraged to engage in discussion around four main themes: 1) Priorities among Hispanic Students at City Tech; 2) Diversity at City Tech; 3) Awareness about what City Tech is doing as a Hispanic Serving Institution; and 4) Enhancing Hispanic Service at City Tech. The key points and responses are summarized below.

1) Priorities among Hispanic Students at City Tech
Participants were asked to reflect on Hispanic students' priorities and concerns as students in an institution of higher education. The priorities and concerns identified included increased availability and awareness of student support services and how to use them. Additional concerns identified by participants included language barriers, advisement needs, social interactions, and financial needs.

2) Diversity at City Tech
Participants were asked to reflect on the current state of diversity at City Tech, to compare the needs of different racial and ethnic groups at City Tech, and to identify similarities among the groups. City Tech is considered a diverse community. However, respondents felt that the word "diversity" is taken for granted without tangible actions that support diversity. Respondents felt that the college needs to highlight its diversity through activities

and programs that support cultural differences and promote inclusivity. They also felt there is a need for the college to provide diversity training, offer courses that focus on cultural issues, and tailor student support specific to cultural groups.

3) Awareness about what City Tech is doing as a Hispanic Serving Institution
Participants were asked to identify current support mechanisms in place at City Tech specific for Hispanic students. Programs and activities highlighted included the Hispanic Federation's CREAR Futuros (a peer-mentoring program for first year students), cultural events on campus, and individual grant activities by faculty members. Overall the discussion centered on the need to take action in order to further support Hispanic students.

4) Enhancing Hispanic Service at City Tech
Participants were asked to provide recommendations to enhance services and programs that support Hispanic students at City Tech. The participants stressed the importance of assessing the needs of the students or target population in order to design intervention strategies. Suggested activities included: faculty mentoring, peer mentoring, and increasing access to student supports such as CSTEP, ASAP, tutoring, and student clubs. It was also suggested that centralizing these services in one visible location with flexible hours would serve to increase accessibility.

Participants in the forum discussion felt that in order to be a truly responsive HSI, the college must incorporate culturally responsive actions across the curriculum, student services, and student life experiences. Their recommendations include:

1. Focusing more on promoting Hispanic pride and recognition that City Tech is an HSI.
2. Providing more opportunities for student perspectives to be shared.
3. Increasing HSI-focused programs and awareness.
4. Increasing opportunities for learning the needs of Hispanic students.
5. Bringing awareness to the "Hispanic experience," the intragroup diversity, and engaging students accordingly.
6. Developing a culturally responsive curriculum.
7. Advocating the needs of Hispanic students.
8. Focusing on retention and success.

This forum was a first step towards important conversations about what it means for City Tech to be an HSI, how to make this designation a more central part of the institutional climate and culture, and how to identify ways of supporting Hispanic students. Overall, data collected from the HSI Forum made it evident that very few initiatives are designed to specifically target Hispanic students.

The forum planning committee was comprised of Hispanic faculty representative of the three schools, Technology and Design, Professional Studies, and Liberal Arts and Sciences. The planning committee members were Melanie Villatoro, Mery Diaz, Ruth Garcia, Benito Mendoza, Lisette Santisteban, Noemi Rodriguez, and Aparicio Carranza. The event was sponsored by the Office of the Provost, Office of Enrollment and Student Affairs and the Deans of all three schools.

Recommendations

The 2018 Middle-States Accreditation report endorses the following goals set by the College: to double the number of students who complete their associate degrees or transfer to baccalaureate programs in three years, as well as to achieve a six-year graduation rate of 50% for baccalaureate program students. As an HSI, especially one in a system that heavily serves Hispanic students, and given the population trends, City Tech must identify and address the needs of Hispanic students to promote student retention and success.[13]

As an HSI institution, City Tech needs to:

1. Understand the factors that contribute to or hinder academic success for Hispanic undergraduate students.

2. Recognize the diversity within the population of Hispanic undergraduate students and take these differences into account to better support students.

3. Acknowledge the importance of having a representative size of Hispanic faculty and administrators to serve as role models for Hispanic students.

4. Identify how to leverage existing assets, including faculty and student resources, to benefit more Hispanic students.

5. Provide mentoring and leadership training for Hispanic faculty to promote their career advancement.

6. Become actively involved in the existing network of HSI's and promote membership in HSI-related programs to increase opportunities for faculty and students.

7. Learn from successful institutions and from scholarship about effective practices for increasing the success of Hispanic students.

Future Goals

A Hispanic Serving Institution Committee is being established to support City Tech in its mission to increase student success and retention by focusing on academic attainment of Hispanic undergraduates and career advancement of Hispanic faculty. Based on the recommendations that emerged from the forum, the organizers of the HSI forum identified three preliminary goals that this committee can pursue. These goals are to:

1. Increase awareness and understanding of City Tech as an HSI.

2. Research and promote best/successful practices that have been demonstrated to support and advance Hispanic students and faculty.

3. Build institutional capacity and coordinate resources for Hispanic students in one central location, virtually and/or physically.

[13] Garcia, G. (2019). Becoming Hispanic-serving institutions: Opportunities for colleges and universities (Reforming higher education : innovation and the public good). Baltimore, Maryland: Johns Hopkins University Press.