

## Table of Contents

### **Building Capacity at Hispanic Serving Institutions**

Subcommittee of the Advisory Committee of the Directorate for Education and Human Resources

August 14, 2017

<u>Meeting Agenda</u> .....	2
<u>Charge and Guiding Questions</u> .....	5
<u>Legislation in FY 2017 regarding NSF and HSIs</u> .....	7
<u>Panelist Biosketches</u> .....	8
<u>Panelist Statements</u> .....	12
<u>NSF Merit Review</u> .....	33
<u>EHR Program Synopses</u> .....	35
<u>Meetings and Conferences</u> .....	41
<u>Example: HSCC Kickstarter project</u> .....	49
<u>Summaries of 2015-2016 HSIs and Emerging HSIs (<i>Excelencia</i> in Education)</u> ...	50
<u>Subcommittee Roster</u> .....	52
<u>Subcommittee Biosketches</u> .....	54

**Building Capacity at Hispanic Serving Institutions  
Subcommittee of the Advisory Committee of the  
Directorate for Education and Human Resources**

Monday, August 14, 2017  
National Science Foundation, 4201 Wilson Boulevard, Arlington, VA  
Stafford I, Room 880

**Charge:** The subcommittee is charged to provide NSF with advice that will inform the design of a new undergraduate program for HSIs to build capacity at institutions of higher education that typically do not receive high levels of NSF grant funding. The subcommittee is specifically asked to identify the most critical challenges and opportunities regarding undergraduate STEM education at two-year and four-year HSIs, and potential actionable solutions that fall within NSF's mission and that could be addressed in a new NSF program.

**Guiding Question:** What does NSF need to know to build the capacity of HSIs that typically do not receive high levels of NSF funding?

**Sub-questions:** What does 'building capacity' mean to you? If an institution received a capacity-building grant from NSF, how would it know if its efforts had been successful?

**8:00am-8:30am**                      **Arrive at Reception & Information Center; proceed to Room 880**

**8:30am-8:45am**                      **Opening Remarks**

*Dr. Joan Ferrini-Mundy, Chief Operating Officer, NSF*  
*Dr. William (Jim) Lewis, Acting Assistant Director, EHR*  
*Dr. Francisco Rodriguez, Subcommittee Chair; Chancellor, Los Angeles Community College District; Chair, EHR Advisory Committee*

**8:45am-9:00am**                      **Meeting Overview and Introductions**  
Dr. Francisco Rodriguez

**9:00am-11:00am**                      **Guest Panelist Presentations and Discussion**  
Moderator, Dr. Joan Walker

*Dr. Anne-Marie Nuñez, Associate Professor of Higher Education and Student Affairs, The Ohio State University*  
*Dr. Sylvia Hurtado, Professor of Education, University of California Los Angeles*  
*Dr. Antonio Flores, President and Chief Executive Officer, Hispanic Association of Colleges and Universities (HACU)*  
*Ms. Deborah A. Santiago, Chief Operating Officer and Vice President for Policy, Excelencia in Education*

**11:00am-11:15am**                      **BREAK; Remainder of meeting is closed.\***

**11:15am-11:45am**

**\*Discussion: Challenges to Building Capacity**

Moderator, Dr. Francisco Rodriguez

***Guiding Question:***

What are the most pressing challenges that you face at your institution in terms of building capacity for undergraduate STEM education?

**11:45am-12:00pm**

**Pick up box lunches; Proceed to breakout group locations**

**12:00pm-1:00pm**

**\*Breakout groups: Opportunities for Building Capacity**

Facilitated by members of EHR's HSI Working Group

***Guiding Questions:***

What could the new NSF HSI program look like? What kind of activities, with what partnerships, would strongly support building capacity in undergraduate STEM education?

**1:00pm-1:15pm**

**Return to Room 880**

**1:15pm-2:15pm**

**\*Report-out and Discussion**

***Guiding Questions:***

What's the most important thing for NSF to do first? What are the implications of today's discussions for development of the new HSI undergraduate STEM education program?

**2:15pm-2:30pm**

**\*Wrap-up and Closing Remarks**

**Dr. William (Jim) Lewis**, *Acting Assistant Director, EHR*

**Dr. Francisco Rodriguez**, *Subcommittee Chair; Chancellor, Los Angeles Community College District; Chair, EHR Advisory Committee*

**Next steps:** A draft report of this meeting will be sent to you for review on Friday, August 25<sup>th</sup>. We welcome your comments on the report by Friday, August 31. The report will be used, along with results from the virtual meeting, to inform the HSI program solicitation.

*\*closed sessions*

**Meeting of the Building Capacity at Hispanic Serving Institutions Subcommittee  
of the Advisory Committee of the Directorate for Education and Human Resources**

Monday, August 14, 2017

National Science Foundation, 4201 Wilson Boulevard, Arlington, VA  
Stafford I, Room 880

**Room Assignments for 12:00pm-1:00pm Breakout Groups**

**Group 1: Room 805**

**Subcommittee members:**

Irma Becerra, Carlos Castillo-Chavez, Nora Garza, José Herrera, Shari McMahan, Bart  
Patterson

**NSF/EHR Facilitators:**

**Jermelina Tupas**, *Acting Division Director, Division of Human Resource Development*

**Carol Van Hartesveldt**, *Staff Associate, Office of the Assistant Director*

*notes: Susan Poland, Science Assistant, Office of the Assistant Director*

**Group 2: Room 830**

**Subcommittee members:**

Daniel Howard, Richard Levao, Gail Mellow, Francisco Rodriguez, José Rodríguez-  
Medina

**NSF/EHR Facilitators:**

**Lee Zia**, *Deputy Division Director, Division of Undergraduate Education*

**Victor Santiago**, *Program Director, Division of Human Resource Development*

*notes: Chantel Fuqua, AAAS S&T Policy Fellow, Division of Human Resource Development*

**Group 3: Room 880**

**Subcommittee members:**

George Martin, Félix Matos Rodríguez, Diana Natalicio, Eduardo Padrón, Mark  
Rosenberg

**NSF/EHR Facilitators:**

**Joan Walker**, *Subcommittee Executive Secretary; Program Director, Division of Research on Learning  
in Formal and Informal Settings*

**Ellen Carpenter**, *Program Director, Division of Undergraduate Education*

*notes: Ashley Morici, Technical Writer and Editor, BayFirst Solutions LLC*

**Charge to: Building Capacity at Hispanic Serving Institutions Subcommittee of the Advisory Committee of the Directorate for Education and Human Resources**

NSF has a long-term commitment to broadening the participation of underrepresented groups in science, technology, engineering, and mathematics (STEM) education and careers. A key component of that commitment is increasing the participation, retention, and graduation rates of underrepresented minorities seeking associate or baccalaureate degrees in STEM fields. NSF recognizes the importance of Hispanic Serving Institutions (HSI) to the Nation's STEM enterprise. The Consolidated Appropriations Act 2017, Public Law No. 115-31, provides the following additional guidance to the National Science Foundation:

**Hispanic-Serving Institutions [HSI] Program—**

*The agreement also directs NSF to establish an Hispanic Serving Institution (HSI) program at no less than \$15,000,000 as authorized in 42 U.S.C. 1862o-12. The agreement encourages NSF to use this program to build capacity at institutions of higher education that typically do not receive high levels of NSF grant funding.*

The Foundation seeks to establish a program for HSI that will make an important contribution to broadening the participation of underrepresented groups in STEM. It is anticipated that the program will focus on undergraduate STEM education at two-year and four-year institutions.

**To advise NSF regarding the characteristics of the program, the Directorate for Education and Human Resources Advisory Committee is appointing the Building Capacity at Hispanic Serving Institutions Subcommittee.** The subcommittee will be composed of: Chair Francisco Rodriguez, 3-5 additional EHR Advisory Committee members, and approximately 20 campus leaders representing a range of HSI types, sizes, and geographic locations.

**Charge:** The subcommittee is charged to provide NSF with advice that will inform the design of a new undergraduate program for HSI to “build capacity at institutions of higher education that typically do not receive high levels of NSF grant funding.” The subcommittee is specifically asked to identify the most critical challenges and opportunities regarding undergraduate STEM education at two-year and four-year HSI and potential actionable solutions that fall within NSF's mission and that could be addressed in a new NSF program.

**Background information:** There will be one in-person meeting of the subcommittee at the NSF headquarters in Arlington, VA, on Monday, August 14, 2017, from 8:00 a.m. to 2:30 p.m. NSF staff are developing data and summary information to inform the subcommittee's discussion and staff will be available to support the work of the subcommittee. A technical writer will be present to take notes and draft a report with support from NSF staff. The report will be sent to members of the subcommittee for review. It is anticipated that there will be one follow-up virtual meeting to discuss and approve the report which will then be submitted to the EHR Advisory Committee. The target for completing and approving the report is September 30, 2017.

**Building Capacity at Hispanic Serving Institutions  
Subcommittee of the Advisory Committee of the  
Directorate for Education and Human Resources**

Monday, August 14, 2017

National Science Foundation, 4201 Wilson Boulevard, Arlington, VA  
Stafford I, Room 880

**Overarching Questions for the Meeting**

*Guiding question:* What does NSF need to know to build the capacity of HSIs that typically do not receive high levels of NSF funding?

*Sub-questions:* What does 'building capacity' mean to you? If an institution received a capacity-building grant from NSF, how would it know if its efforts had been successful?

**Discussion questions for specific sessions**

**11:15am-11:45am      Discussion: Challenges to Building Capacity**

*Guiding question:* What are the most pressing challenges that you face at your institution in terms of building capacity for undergraduate STEM education?

**12:00pm-1:00pm      Breakout groups: Opportunities for Building Capacity**

*Guiding questions:* What could the new NSF HSI program look like? What kind of activities, with what partnerships, would strongly support building capacity in undergraduate STEM education?

**1:15pm-2:15pm      Report-out and Discussion**

*Guiding questions:* What is the most important thing for NSF to do first? What are the implications of today's discussions for the development of the HSI undergraduate STEM education program?

**Policy: The National Science Foundation and Hispanic Serving Institutions**

**Explanatory Statement for the Consolidated Appropriations Act, 2017  
Public Law 115-31**

“The agreement also directs NSF to establish an Hispanic Serving Institution (HSI) program at no less than \$15,000,000 as authorized in 42 U.S.C. 1862o-12. The agreement encourages NSF to use this program to build capacity at institutions of higher education that typically do not receive high levels of NSF grant funding.”

**American Innovation and Competitiveness Act  
Public Law 114-329**

“SEC. 315. HISPANIC-SERVING INSTITUTIONS UNDERGRADUATE PROGRAM  
UPDATE.

(a) IN GENERAL.—Section 7033(a) of the America COMPETES Act (42 U.S.C. 1862o–12(a)) is amended as follows:

“(a) IN GENERAL.—The Director shall award grants on a competitive, merit-reviewed basis to Hispanic-serving institutions (as defined in section 502 of the Higher Education Act of 1965 (20 U.S.C. 1101a)) to enhance the quality of undergraduate STEM education at such institutions and to increase the retention and graduation rates of students pursuing associate’s or baccalaureate degrees in science, technology, engineering, and mathematics.”

**Antonio Flores, PhD**  
**President and Chief Executive Officer**  
**Hispanic Association of Colleges and Universities (HACU)**



[antonio.flores@hacu.net](mailto:antonio.flores@hacu.net)

On February 26, 1996, Antonio R. Flores became the third president and chief executive officer of the Hispanic Association of Colleges and Universities (HACU). Established in December 1986 with 18 founding members, HACU is a national organization that represents more than 450 colleges and universities that collectively serve two-thirds of the more than 3 million Hispanic students in US higher education across 37 states, the District of Columbia and Puerto Rico. HACU's international membership of leading higher education institutions is also an important HACU constituency. Prior to his position at HACU, Flores served as director of programs and services for the Michigan Higher Education Assistance Authority and the Michigan Higher Education Student Loan Authority. His statewide responsibilities included policy analysis and development, legislative affairs, administrative leadership for programs, technical assistance and outreach services for all Michigan colleges and universities, program evaluation and research, and overall management.

**Sylvia Hurtado, PhD**  
**Professor of Education**  
**UCLA**



[shurtado@gseis.ucla.edu](mailto:shurtado@gseis.ucla.edu)

Sylvia Hurtado is Professor, Graduate School of Education and Information Studies at UCLA, in the Division of Higher Education and Organizational Change. She is currently Director of the Higher Education Research Institute, which houses the Cooperative Institutional Research Program (CIRP). CIRP is the longest-running empirical study of higher education involving data collection on students and faculty. Her numerous publications focus on undergraduate education, student development in college, and diversity in higher education. She is past President of the Association for the Study of Higher Education (ASHE), and served on the boards of the Higher Learning Commission and initiatives of the Association of American Colleges and Universities. Recent national projects include research on how colleges are preparing students to participate in a diverse democracy (US Department of Education), the pathways of underrepresented students in scientific research and professional careers (National Institutes of Health/National Science Foundation), and student and institutional outcomes of diverse and broad access institutions in higher education (Ford Foundation). She obtained her degrees from UCLA (PhD), Harvard Graduate School of Education (MEd) and Princeton University (AB).

**Anne-Marie Nuñez, PhD**  
**Associate Professor of Higher Education and Student Affairs**  
**The Ohio State University**



[nunez.80@osu.edu](mailto:nunez.80@osu.edu)

Anne-Marie Nuñez is associate professor of Higher Education and Student Affairs in the Department of Educational Studies at The Ohio State University. Her research explores how to broaden participation for historically underrepresented groups, including students and faculty, in postsecondary education. One line of her scholarship has focused on the higher education experiences and trajectories of Latino, first-generation, and migrant students. Another has emphasized institutional diversity in the United States, including the role of Hispanic Serving Institutions in promoting college access and success. A third has focused on fostering supportive organizational climates for faculty and administrators to advance inclusivity in the academy. Her research has been published in *Educational Researcher*, *Harvard Educational Review*, and the *American Educational Research Journal*. For her contributions to research on underrepresented groups, she received the 2011 Association for the Study of Higher Education (ASHE) Council on Ethnic Participation Mildred Garcia Exemplary Scholarship award. Currently, she serves as an Associate Editor of *The Journal of Higher Education* and an Associate Editor of the *Higher Education: Handbook of Theory and Research*. She holds a PhD in Education from UCLA, MEd in Education from Stanford University and AB in Social Studies from Harvard University.

**Deborah A. Santiago**  
**Chief Operating Officer and Vice President for Policy**  
***Excelencia in Education***



[dsantiago@edexcelencia.org](mailto:dsantiago@edexcelencia.org)

Deborah Santiago is the co-founder, Chief Operating Officer and Vice President for Policy at *Excelencia in Education*. For more than 20 years, she has led research and policy efforts from the community to national and federal levels to improve educational opportunities and success for all students. She co-founded *Excelencia in Education* to inform policy and practice compel action, and collaborate with those committed and ready to act to increase student success. Her current work focuses on federal and state policy, financial aid, Hispanic Serving Institutions, and effective institutional practices for student success in higher education. She has been cited in numerous publications for her work, including *The Economist*, *The New York Times*, *The Washington Post*, *AP*, and *The Chronicle of Higher Education*. Deborah is an Aspen Institute Pajara fellow and serves on the board of *TheDream.US*.

**Hispanic-Serving Institutions: Where are they now?**

Anne-Marie Núñez  
Associate Professor, Higher Education  
The Ohio State University

Adapted from **Núñez, A.-M.** (2015). *Hispanic-Serving Institutions: Where are they now?* A commissioned paper presented at the meeting “Hispanic-Serving Institutions in the 21<sup>st</sup> century: A convening” at the University of Texas El Paso. El Paso, TX. <http://www.edexcelencia.org/hsi-cp2/hsi-21st-century-convening>

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Since Hispanic-Serving Institutions (HSIs) were initially designated as federal institutions in 1992, the United States population has undergone significant demographic transformation with respect to racial/ethnic composition, most signified by the increase in the Latino population. Namely, the Latino population has grown from a share of 9% of the population as measured in the 1990 Census to 16% of the population as measured in the 2010 Census, and Latinos accounted for over half the growth in the U.S. population during each of the two intervening decades (Passel, Cohn, & López, 2011; U.S. Census Bureau, 2001). Furthermore, the college population has also seen significant demographic shifts in this time frame, as Latinos have now surpassed African Americans as the largest population of color enrolled in the U.S. postsecondary education system (Fry & López, 2012).

Along with these demographic shifts in the general and college-age population, the number of HSIs in the U.S. has increased dramatically. HSIs are defined as 2-year or 4-year public or private not-for-profit institutions that enroll 25% or more full-time undergraduate students of Latino descent. Since these institutions were first eligible to apply for federal funding on the basis of their HSI designation in 1994, they have doubled in number from 189 to 409, to the point where (as of 2014) they constitute 12% of all colleges and universities and serve 18% of all U.S. college students, as well as the majority (60%) of all Latino college students (Calderón Galdeano & Santiago, 2015).

Raising postsecondary attainment in the U.S. has emerged as a key policy goal under the Obama administration, but reaching this goal will be impossible without raising Latino postsecondary attainment (Kelly, Schneider, & Carey, 2010). HSIs award 40% of all bachelor's degrees earned by Latinos and 54% of the bachelor's degrees earned by Latinos in the Science, Technology, Engineering, and Math fields (Harmon, 2012; Hixson, 2009). Because of the large

share of Latino students that they serve, HSIs will play a critical role in raising U.S. higher education attainment and therefore must be a focus of efforts in this country to provide increased opportunities for postsecondary access and success. The purpose of this paper is to address the current state of HSIs. It first provides an overview of these HSIs' characteristics, their growth during the past two decades, and the institutional diversity among HSIs. It continues by exploring how HSIs "serve" Latino students by addressing multiple dimensions of HSIs' organizational behavior. It concludes with brief thoughts on what the term "serving" means in terms of how HSIs construct organizational identities to address the needs of Latino students.

### **Growth among HSIs**

As noted, HSIs have grown significantly as a presence among higher education institutions, to where they now constitute 12% of all American colleges and universities. Their numbers have increased by 116% since their official recognition by the federal government in 1994. To date, the largest year-to-year growth in the number of HSIs occurred between the 2010-11 and 2011-12 academic years, when the number of HSIs increased by 45 institutions (*Excelencia in Education*, 2015). Between 1994 and 2013, the states and regions with the largest numbers of HSIs have remained the same – Puerto Rico, California, and Texas. With an increase in HSIs from 40 to 127 institutions (or 218% growth) during that time, California has seen the biggest jump in the number of HSIs. Signaling an increasing Latino presence on the U.S. mainland, the number of HSIs in California surpassed those in Puerto Rico in 1996, and the number of HSIs in Texas surpassed the number of those in Puerto Rico in 2012. In 2012-13, sixty-nine percent of HSIs were located in these three places (*Excelencia in Education*, 2015).

In addition to the increasing numbers of HSIs in locations where many Latinos have historically lived, Latino settlement in new areas and states around the country suggests that

more regions will have HSIs soon, as indicated by the presence of what are called “Emerging HSIs” in states like Wisconsin, Georgia, Oregon, North Carolina, Nebraska, and Massachusetts (*Excelencia in Education*, 2015). “Emerging HSIs” are not federally designated institutions, but have been defined by *Excelencia in Education* as colleges and universities with between 15 and 25% Latino enrollment that may soon become HSIs due to enrollment. If the 296 “Emerging HSIs” were to become HSIs tomorrow, that would represent a 72% increase in the number of HSIs. Similar to the growth in HSIs since 1994, the number of Emerging HSIs has increased by 103% (*Excelencia in Education*, 2015). Furthermore, of the institutions that were Emerging HSIs in 1994, the majority (62%) had become HSIs by the 2013-14 academic year. Notably, although HSI status can vary from year to year based on the proportion of Latino enrollment, these trends suggest that once institutions become HSIs, they tend to remain HSIs by enrollment.

Based on past and current trends, it appears that HSIs will continue to enroll the majority of Latino college students, with this share currently at 60%. Institutions designated as HSIs in 1994 at the time served fewer than half (46%) of Latino students, so this increase in the share of Latino college students represents 30% growth (Calderón Galdeano & Santiago, 2014). Therefore, HSIs will continue to play a critical role in providing postsecondary opportunities for the largest population of color in the U.S.

### **Institutional diversity among HSIs**

HSIs are relatively difficult to characterize as a whole set of institutions because they encompass a considerable amount of institutional diversity, including about 52% two-year institutions and 48% four-year institutions in both the public and not-for-profit sectors (Calderón Galdeano & Santiago, 2014). They are one of the top three most common kinds of Minority-Serving Institutions (MSIs), a group that also includes Historically Black Colleges and

Universities (HBCUs) and Tribal Colleges and Universities (TCUs). Notably, the Carnegie classification system names the latter two as distinctive kinds of American higher education institutions, but HSIs are not distinguished separately in this classification. In contrast to HBCUs and TCUs, HSIs do not automatically receive federal funding for serving historically underrepresented students. Only HSIs that meet the Latino enrollment requirements and enroll at least half low-income and first-generation college-going students can apply for Title V funding under the Developing Hispanic-Serving Institutions Program, through which these institutions must stipulate specific institutional development plans to improve services to these students (Higher Education Act of 1965, 2013; Santiago, 2006).

HSIs already comprise the largest share of MSIs. Notably, while the number of HBCUs and TCUs is relatively stable, the same is not the case for HSIs, which have grown to be double the number of these other Minority Serving Institutions. On the whole, HSIs serve student bodies that are compositionally quite diverse; in fact, they enroll a greater proportion of Black students in the U.S. than HBCUs (16% versus 10%) and a greater proportion of Native American students than TCUs (14% versus 11%) (Calderón Galdeano & Santiago, 2014).

One critical difference between HSIs, HBCUs, and TCUs is that HSIs' federal designation is not based on historical mission but on enrollment figures. Because HSIs include community colleges, small liberal arts schools, larger public institutions, and special interest schools like health sciences institutions, they will have varied educational missions. The compelling questions of how and the extent to which HSIs are truly "serving" Hispanic students --- addressing their particular needs and ensuring their college success—is complicated by the multiple institutional missions of HSIs and their local histories, including whether they have

been HSIs a long time and the proportion of Latino students enrolled. We will come back to this critical issue later in the paper.

Providing a sense of the landscape of all HSIs is instructive for understanding the current status of these diverse institutions. With this in mind, my colleagues and I have developed a typology of HSIs that is based on a full census of these institutions using variables within the U.S. Department of Education Integrated Postsecondary Education Data System (IPEDS) including type, control, enrollment size, student body composition, financial expenses, financial revenue, and local community characteristics. Using the statistical method of cluster analysis, we have identified six types (or clusters) that we call: (1) Urban Enclave Community Colleges, (2) Rural Dispersed Community Colleges, (3) Big Systems 4-Year Institutions, (4) Small Communities 4-Year Institutions, (5) Puerto Rican Institutions, and (6) Health Science Schools. Together, these types describe the full range of HSIs (Núñez, Crisp, & Elizondo, 2016).

Following is a brief description of each type, in order of frequency:

- **Urban Enclave Community Colleges (37%).** Public institutions offering associates degrees or certificates, concentrated in large metropolitan areas with traditionally large populations of Latinos (examples: Phoenix College, East Los Angeles College, Houston Community College, and Broward College)
- **Big Systems Four-Years (21%).** Mostly campuses of large state public institution four-year systems, often located in cities and in the Southwestern and Western regions. (Examples: California State University-Bakersfield, University of California-Riverside, Florida International University, University of New Mexico, Texas A&M University-Corpus Christi, and CUNY City College).
- **Puerto Rican Institutions (19%).** Located in Puerto Rico, the majority are private, with a nearly exclusive presence of Hispanic faculty and students. (Examples: American University of Puerto Rico, Inter American University of Puerto Rico-Ponce, University of Puerto Rico-Arecibo).
- **Rural Dispersed Community Colleges (13%).** Public institutions offering associates degrees or certificates, concentrated in towns and rural, isolated areas, often in the Southwest. Lower student enrollment, especially compared with Urban Enclave Community Colleges. (Examples: Merced College, Dodge City Community Colleges, New Mexico Junior College, Southwest Texas Junior College).
- **Small Communities Four-Years (9%).** Mostly private, smaller campuses that offer bachelor's degrees or higher. More selective than other four-year institutions. Include

many smaller liberal arts institutions and several small religious institutions. Located in urban and suburban areas, primarily in the West and South (Examples: University of La Verne, College of Mount Saint Vincent, Our Lady of the Lake University)

- **Health Sciences Schools (2%).** Only two exist – one in Puerto Rico, and one in Texas. Focused on health sciences and medical studies, these have relatively low enrollment, highly selectivity, and higher levels of institutional funding (University of Texas Health Sciences Center, University of Puerto Rico Medical School)

A descriptive overview of all HSIs reveals considerable diversity among these institutions.

According to data from Núñez, Crisp, and Elizondo (2016), the average enrollment size among all HSIs is 6,173, with the largest enrollment running just over 36,000 students. While HSIs enroll on average over half (53%) Latino students, this percentage can range from 25 to 100%.

HSIs enroll on average 40% Pell grant recipients, but the proportion across all HSIs ranges from 4% to 97%. Although 2-year and 4-year HSIs are on the whole far less well resourced than their non-HSI counterparts (Ortega, Frye, Nellum, Kamimura, & Vidal-Rodríguez, 2015),

instructional, academic support, and student services expenses, as well as state appropriations and tuition and fees revenue, vary widely among HSIs as well.

Local community conditions for HSIs also vary. On average, one-quarter of those in the local area of an HSI have a college degree, but this proportion can range from 9% to 63% (Núñez, Crisp, & Elizondo, 2016). Similarly, local unemployment conditions vary widely, with local unemployment in regions where HSIs are located averaging 9%, but ranging from 3% to 27%, with the latter proportion reflecting the difficult economic situation in Puerto Rico (Núñez & Crisp, 2012; Núñez, Crisp, & Elizondo, 2016; Rodríguez, 2011). In sum, the considerable diversity among HSIs indicates that when discussing any single HSI or a group of HSIs, it is important to situate these institutions within the overall HSI landscape.

### **HSIs' institutional identities and organizational behavior**

HSIs are simultaneously very diverse institutions and socially “invented” constructs (Santiago, 2006). Therefore, determining how being an HSI influences institutional identities, and in turn what it means for an organization to “Hispanic-Serving,” is a fairly complex question. Here, I will briefly frame some of the parameters concerning how HSIs construct their institutional identities and organizational behaviors.

HSIs no doubt have reached considerable compositional diversity in terms of the racial/ethnic makeup of their student bodies, providing critical access to postsecondary education for historically underrepresented groups. However, simply having an increased presence of Latino students on campus is not enough to guarantee that institutional personnel will be responsive to Latino students' particular needs. In addition to compositional diversity, institutions concerned with maximizing learning opportunities for diverse students must consider behavioral, psychological, and organizational dimensions of diversity as well (Hurtado & Ruiz Alvarado, 2015). Furthermore, external conditions including federal, state and local policies and the historical context of each HSI will shape how each of these institutions serves their student bodies (Doran, 2015; García, 2013, 2017; Hurtado & Ruiz Alvarado, 2015).

When considering behavioral diversity in relation to student outcomes, the most common measure of the extent to which HSIs are serving Latino students is the outcome of Latino graduation rates. There is much concern that HSIs have lower graduation rates in general and often lower Latino persistence rates than other institutions (Contreras, Malcom, & Bensimon, 2008). Notably, though, HSIs are unique institutions, and comparisons of them with other institutions should be made with caution. Researchers have found that finding a complete and appropriate set of “peer” or comparison institutions for many HSIs (that is, institutions that are

similar to HSIs in other respects except for the Hispanic enrollment proportion) is impossible (Rodríguez & Calderón Galdeano, 2014, 2015). Furthermore, several recent national studies suggest that it is student characteristics (particularly academic underpreparation from the K-12 system) and limited institutional resources (Ortega et al., 2015) that primarily account for HSIs' lower graduation rates (Flores & Park, 2013, 2014a, 2014b; Núñez & Elizondo, 2012; Rodríguez & Calderón Galdeano, 2014, 2015). Thus, it is important to place HSIs' graduation rates in a broader context about many HSIs' missions to provide historically underserved students with college access and to be wary about holding HSIs accountable for the comparatively limited academic preparation of their students (Núñez & Bowers, 2011; Núñez, 2014), particularly in light of findings indicating that 60% of the difference in HSI and non-HSIs' graduation rates is accounted for by pre-college academic preparation factors (Flores & Park, 2014b).

Research suggests that Latinos may have more positive psychological experiences in HSIs. Attending an institution with a higher level of Hispanic enrollment is associated with fewer reports of subtle or overt discrimination among Latino students (Hurtado, 1994). Attending an HSI, compared with an Emerging HSI or a non-HSI is positively associated with academic self-concept and community engagement for Latino students (Cuellar, 2014, 2015). Given that Latinos express lower confidence in their academic abilities than other students (Longerbeam, Sedlacek, & Alatorre, 2004), and that academic confidence is among the most important predictors of graduation (Lotkowski, Robbins, & Noeth, 2004), HSIs' capacity to promote academic self-concept can advance important longer-term outcomes. Although postsecondary outcomes are often framed in individualistic terms, encouraging Latino students to become leaders in their communities is also an important social benefit (Núñez, 2014). Recognizing these positive Latino student experiences expands the lens to view how HSIs "serve" Latino students.

HSIs' publicly articulated visions of organizational behavior can also signal how institutional leaders and personnel prioritize various objectives. Mission statements and strategic plans have been examined as indicators of the extent to which HSIs "serve" Latino students (Contreras et al., 2008; Malcom-Piqueux, & Bensimon, 2015). Few HSIs in fact express their status as an HSI in mission statements on their web sites or in strategic planning materials, causing some concern about the extent to which HSIs authentically "serve" Latino students (Contreras et al., 2008; Malcom-Piqueux & Bensimon, 2015).

However, there is empirical evidence that HSIs make distinctive efforts to "serve" Latino students, even if these institutions may not articulate their HSI status in more overt ways. As already noted, Latino students tend to have more positive, empowering, and community-oriented experiences in HSIs. Furthermore, instructors in HSIs tend to use more "student-centered" pedagogical approaches, including class discussions, group projects, and reflective writing and journaling and to include community service and student-selected content as part of their coursework (Hurtado and Ruiz, 2015, p. 35). The research also indicates that, although HSIs (like other institutions) lack a fully representative proportion of Latino faculty and administrators in relation to Latino students (Contreras & Contreras, 2015; Hatch, Mardock, & García, 2015; Santos & Acevedo Gil, 2013), that Latino students still are more likely to encounter Latino faculty in HSIs than other institutions (Hatch et al., 2015; Hurtado & Ruiz Alvarado, 2015; Perna, Li, Walsh, & Raible, 2010). While Latino faculty and administrators are certainly not the only personnel who can or should be responsible for understanding and supporting Latino students, they can serve as particularly critical role models who help Latino students navigate college, particularly in academic fields where Latinos are underrepresented (Cortez, 2015; Ponjuán, 2011; Stanton-Salazar, Macias, Bensimon, & Dowd, 2010).

Importantly, serving Latino students in HSIs is a collective responsibility, and following culturally responsive institutional policies and practice can advance Latino success in these settings (Malcom-Piqueux and Bensimon, 2015; Núñez, Hoover, Pickett, Stuart-Carruthers, & Vázquez, 2013). In fact, empirical research indicates that, although faculty and staff in HSIs may not foreground their organization's identity as an HSI to external constituents, these personnel may also be continually acting to support Latino student success internally, within their own institutions (García, 2013, 2017). Put differently, while some HSIs may not have a very apparent espoused mission to target Latino students, personnel at these institutions still serve as critical "institutional agents" (Malcom-Piqueux & Bensimon, 2015; Stanton-Salazar et al., 2010) who build an organizational culture to advance Latino student success (García, 2017).

Collectively, this research suggests that multiple ways of defining Latino student success and organizational commitment to advancing it must be considered when examining how HSIs enact their organizational identities. Furthermore, considering the variation in institutional conditions among HSIs, it is quite likely that indicators that mean one thing in a particular HSI may not be relevant in, or may not mean the same thing, in another HSI. Considering the full range of contextual factors internal and external to HSIs is critical to understanding how HSIs foster environments where Latino students can thrive (Hurtado & Ruiz, 2015).

### **Conclusion**

HSIs are invented, socially constructed institutions that encompass significant diversity, both in terms of institutional types and the students they enroll. The research indicates that what "serving" Latinos means in the term "Hispanic-Serving Institutions" is complex, multidimensional, and often unique to different institutions. Although there is a temptation to jump quickly to define exactly what "serving" means on a day-to-day basis, or to frame HSIs in a

dichotomous fashion (i.e., as “serving” or “not serving” Latino students), these framings oversimplify HSIs’ organizational realities for at least five reasons:

- HSIs vary tremendously in their resources to serve Latino students in particular and their student bodies in general.
- HSIs differ significantly from non-HSIs in their resources to serve Latino students in particular and their student bodies in general.
- Pre-college academic factors, rather than experiences in college, account for the majority of differences between HSIs’ and non-HSIs’ graduation outcomes, calling into question how HSIs should be held responsible for achieving these outcomes.
- HSIs face varying external pressures and have different historical contexts (for example, HSIs on the U.S. mainland face distinctive challenges from those in Puerto Rico).
- The same indicators of “serving” Latino students may have very different applications and levels of relevancy in HSIs’ varied institutional contexts.

It may be that terms which connote a continuum of diverse HSIs’ organizational behaviors, such as “Hispanic-Serving(ness)” (Malcom-Piqueux & Bensimon, 2015), more appropriately characterize various ways in which an institution can “serve” Latino students.

In any case, there is mounting evidence that the strategies that “serve” Latino students in fact support *all* students’ capacity to achieve college success. Addressing the needs of Latino students does not have to come at the expense of addressing the needs of other students. As the college-age population becomes more ethnically and socioeconomically diverse, it will become increasingly critical to embed culturally inclusive institutional policies and practices not only in HSIs, but also in *all* colleges and universities’ organizational cultures.

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## **HACU Considerations on New HSI Program at NSF**

This paper was presented to the ad hoc Subcommittee of the National Science Foundation (NSF)/Education and Human Resources (EHR) Advisory Committee on Building Capacity at Hispanic Serving Institutions as part of its meeting agenda of August 14, 2017.

### **HACU and HSIs**

The Hispanic Association of Colleges and Universities (HACU)<sup>i</sup> is committed to working with the NSF and its EHR Directorate to launch and enhance a Hispanic-Serving Institution (HSI) grant program. Science, technology, engineering, and math (STEM) disciplines are unquestionably critical to the future of the nation and the world. Hispanics make up 74% of the growth of the U.S. workforce in this decade<sup>ii</sup> but remain dramatically underrepresented in STEM professions, especially in those positions requiring advanced degrees. It's hard to see how these workforce needs will be met without doing a much better job in assuring the success of Latino STEM students at all levels.

HSIs play a key role in this process. Defined in the Higher Education Act (20 USC 1101a)<sup>iii</sup> as having 25 percent FTE undergraduate Hispanic enrollments (among other criteria that assure eligible HSIs enroll substantial populations of low income students and are below the median in core expenditures for education), HSIs enroll almost 2/3 of the nearly 3.5 million Hispanics in higher education today. Both because this population is one of the fastest growing segments of America today and because Hispanic high school completion rates and college-growing rates, while still trailing those of white non-Hispanic students, have steadily improved over the last few decades, the number of HSIs continues to rise, having doubled in the last 15 years.

Interestingly, HSIs are among the most diverse institutions in the nation. They also enroll more African Americans than the more than 100 Historically Black Colleges and Universities, more American Indians than the 30-plus Tribal Colleges and Universities, more Asian Americans than any other cohort of colleges and universities, and a sizeable number of Anglo students. HSIs truly look like the face of 21<sup>st</sup> century America.

Efforts to improve Hispanic participation in STEM by focusing attention on research institutions have shown only marginal success. The reason for this is not hard to comprehend: they don't enroll very many Hispanics. The 20 research institutions that received the most federal science and engineering funding in FY 2015<sup>iv</sup> enrolled only 30,000 FTE Hispanic undergrads (in all fields) combined, only 1.5% of all Hispanic undergrads. They did better in graduate programs, enrolling 12,294 Hispanic students in all fields, about 5.4% of Latino grad students. HSIs enrolled a million and a quarter Hispanic FTE undergrads, over 60% of Hispanic undergrads in all fields, and 42% of all Hispanic grad students (over 96,000).<sup>v</sup> It makes sense to fish where the fish are, not where you'd like them to be.

Why do Hispanic students, even in STEM, choose HSIs over more prestigious research institutions? There are a number of reasons. Among them is location: HSIs are located close to home. Family ties, sometimes family and work obligations, culture and climate make institutions in one's own backyard the best and sometimes the only option. First generation students and

their families may not be aware of the differences among Carnegie classifications of institutions: a college degree is a college degree for someone who is the first in their family to get one. Those who know something of the college ratings may not feel a research institution is a financial possibility, especially students for whom community college tuition is often a challenge. Overburdened high school counselors are unable to offer every student the college guidance they need, just one consequence of the systemic and persisting segregation of low income students, and especially students of color, in less well-resourced K-12 school.<sup>vi</sup> The disparity in quality of K-12 educational opportunity carries over into disparities in access to experienced teachers and teachers qualified in their discipline, access to advanced math and lab science courses in middle and high school, access to advanced placement, etc. The end result is often a student who is underprepared for college because of a disparity of opportunity, not a disparity of innate talent. And often a student whose SAT and ACT scores would not be considered even should they apply to a more selective university.

Because of our national myth of “meritocracy” we don’t have to worry about students who can’t compete for the best schools, and we tend not to think too highly of (or even too much about) the schools that don’t make the annual college rankings. As a result, we lose the opportunity to develop the bulk of our American talent to its fullest.

HSIs, like the Hispanic populations they serve, are far from monolithic.<sup>vii</sup> Just about half are community colleges, about a third are private four-year institutions, and a sixth are public four-year institutions. They range across 19 states and Puerto Rico. More than half are located in major cities, and another third are suburban, the rest about evenly divided between town settings and rural environments. In addition to the institutions in Puerto Rico, a handful were founded specifically to serve the educational needs of surrounding Hispanic populations. The majority have become HSIs by virtue of enrollment and have varying degrees of institutional recognition of and commitment to that status.

Nevertheless, there are some commonalities across many, if not all HSIs. Not only are they resource-constrained (part of the federal definition requires that core expenses per FTE be below a certain threshold), they also on average receive 30% less federal funding than the average U.S. college or university.<sup>viii</sup> Because fewer than a dozen are research intensive institutions, their focus tends to be far stronger on teaching. This teaching mission often means little institutional support for research, often including the absence of an office of sponsored research. It typically means heavy faculty teaching loads and less emphasis on research productivity in promotion and tenure processes. In STEM fields the combination of limited institutional financial resources and heavy teaching mission can mean limited or no research lab facilities. Lab space is given over almost entirely to teaching activities.

Many HSI STEM faculty have completed their doctoral studies at research universities and many, especially junior faculty, come to HSIs with research ambitions and programs. However, teaching loads and lack of institutional support and incentive, including often the lack of a research culture on campus among colleagues, can make pursuing those ambitions very difficult.

As alluded to above, given the attention in recent decades to university rankings and the media’s near exclusive focus on Ivy League and flagship institutions, HSIs get little attention and little

respect outside their own walls. And this in spite of the fact that they are de facto educating so important a segment of the 21<sup>st</sup> century workforce, a population disproportionately first generation and low income, and doing so with less resources than their much wealthier cousins. Frankly, the fact that it has taken nearly 15 years of HACU advocacy and Congressional action to force NSF to create an HSI program is testimony to how lightly HSIs are valued in the scientific establishment. *NSF can do much to rectify this unjustifiable neglect by proactively recommending to Congress a much greater appropriation for FY 2018 and beyond that reflects the significantly larger number of HSIs and disadvantaged students they serve, compared to other Minority-Serving Institution (MSI) cohorts that receive more funding for many fewer institutions and students.*

### **Considerations in Framing the HSI Program**

Given the realities of HSIs, there are some recommendations for approaches to the NSF HSI program that follow somewhat directly.

First, while no one turns down free money, HSIs are not looking for a grant program that does not have serious expectations that the federal investment will be productive in terms of increasing Hispanic participation in STEM. NSF should be quite clear about the goals of the program and insist that proposals show what they intend to accomplish in terms of increased student access and success in STEM. Success must be measured ultimately in persistence to STEM degrees and proportion of undergraduates who move on to STEM graduate programs and professional careers. However, the systemic changes needed to produce these results mean that evaluation of success cannot be measured over a one- or two-year time frame. Adequate funding, adequate time covered by the grant, adequate opportunity to institutionalize and make permanent systemic changes at the end of the grant period, and evaluation that allows for a long-term analysis seem essential to a successful NSF HSI program.

Second, the resource constraints and lack of research infrastructure at many, if not most, HSIs suggests that significant effort be put into assisting in grant preparation. Planning grants that allow institutions to buy out faculty time, negotiate extra-institutional collaborations, hire (if necessary) grant-writing expertise would be important elements for many institutions to be able to compete at all, much less develop a well-thought-out and successful proposal. Similarly NSF should plan several technical assistance workshops around the country to bring their expertise to bear on institutions for whom this proposal will be a first-time venture. The geographical spread of such workshops is important for institutions for whom a trip to DC is not a regular commute but an expedition into the unknown.

Third, support should be given for collaborations between HSIs and research universities. The HSI should be the fiscal agent and hold the purse strings, if only to avoid an academic colonialism that can result from the imbalance of resources and prestige. Both sets of institutions have much to gain from such balanced collaborations: HSIs often need access to the research infrastructure, lab facilities, specialized equipment and training, professional networks, and ongoing research programs that R1s have; R1s in turn can benefit from access to a cadre of undergraduates whom they might not otherwise encounter and from exposure to teaching techniques effective with less well-prepared student populations. Current research also suggests

that diversity of various kinds is stimulating to innovation and creativity. The end result of these collaborations is likely to be better science, a richer pool of potential graduate students, and a more nuanced understanding of the positive power of diversity. The Broader Impacts criteria already in place for all NSF grants suggest that such collaborations can be promoted in the other directions as well, that, for example, ALL grants over \$500,000 are required to involve an active collaboration with an MSI, funded as part of the grant.

Fourth, in view of the need for institutional change at HSIs, priority should be given to proposals that involve both students and faculty in well-organized team efforts. To increase the number of Hispanic students pursuing graduate STEM degrees and professional STEM careers, they need to be involved in hands-on research opportunities, ideally on their own campuses, but also in summer research opportunities at collaborating research institutions. Similarly, an entire academic department submitting a proposal is more likely to effect systemic change than an individual scientist. Team projects are critical to impacting the culture at an institution and creating a climate that is supportive of research, especially research with strong student involvement. Both student and faculty research opportunities may target summer months as the only time blocks available, and both should provide compensation, essential for participation of low-income students (lest the opportunity cost of giving up another summer job be too great) and important for many HSI faculty. Technology increasingly facilitates collaboration at a distance, but face-time and hands-on lab experience remain critical, especially to students without a deep background in professional science.

Fifth, proposals that involve collaborations with feeder PK-12 districts should be given special attention. Since so many Hispanic students are coming from under-resourced elementary and secondary schools, HSIs can play a key role in early interventions that would increase the pool of well-prepared potential STEM majors. These activities can include informal science experiences, exposure to working scientists (especially Latino/a scientists), summer enrichment opportunities in math and science (especially on college campuses), support for STEM counselling in course selection from at least middle school on, support for college selection and admission procedure counselling, information about financial aid opportunities, support for AP courses and early college programs, etc. The bridge between PK-12 and higher education must be built from both sides if we are to avoid losing so many students in the gap.

Sixth, funding should be available for both student and faculty attendance at professional STEM conferences. These activities should be built into every grant and perhaps a separate fund should be set up to allow for easier access. For first generation students professional conferences offer exceptional opportunities: for many it may be a first experience of travel away from home, it will certainly heighten their awareness of current issues in their discipline, it will expose them to the names and faces of their disciplinary community. Becoming a conference “groupie,” of course, is not to be desired, but it’s difficult to overestimate the potential impact of one’s first attendance at a national STEM-discipline conference. The impact of conference attendance may not be quite as dramatic for faculty members, but HSI faculty often have little or no travel budget and little opportunity to meet and interact with colleagues in their discipline outside their institution.

Finally, support should be considered for well-thought-out infrastructure proposals. As mentioned above, research lab facilities at HSIs are often scarce or non-existent. At some point

as research takes shape, substantial investment in facilities may be required that goes beyond an institution's capacity to support. In cases where NSF cannot directly fund such construction, they can offer their experience and broker other contacts to make this possible. Collaborations with research universities may obviate this need to some degree, but even then NSF can play a vital role in brokering and facilitating those collaborations.

### **In Closing**

Increasing Hispanic participation and success in STEM, the ultimate goal of the NSF HSI program, does not stand alone as a value only for the students who need to find a pathway to a STEM career. It is part of larger process that involves the evolution of the culture of science itself, and of the culture of NSF. The U.S. scientific community benefited enormously from the flood of European refugees in the 1930s and 1940s, an influx of talent that made possible not only the Manhattan project and the space program, but has continued to fuel innovation and creativity almost a century later. But the scientific community can also be exclusive in a highly detrimental way. There are still professors in gateway courses who see their job as weeding out the unprepared and the "unworthy." Many STEM disciplines struggle unsuccessfully with gender equity, an issue set further back by well-publicized incidents of sexual harassment. Silicon Valley has become infamous for ignoring minority talent in its own back yard because it can more cheaply import STEM workers from India and China. In an age where collaboration has become a watchword, disciplinary silos hamper creativity both in universities and at NSF itself. Getting serious about increasing Hispanic participation in STEM will require that many others of these issues be addressed and that our vision of the culture of science become a more inclusive one, rooted in the universal capacity of human beings to wonder and question and the still unexplored possibilities within everyone to contribute to the deeper understanding of our world.

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<sup>i</sup> Founded in 1986, the Hispanic Association of Colleges and Universities (HACU) is the only national membership organization that represents the nation's Hispanic-Serving Institutions and other colleges and universities committed to improving higher educational access and success for Hispanic students. Affiliation of Hispanic-Serving School Districts has allowed HACU to promote greater collaboration across the whole educational pipeline.

<sup>ii</sup> Bureau of Labor Statistics. Toossi, Mitra, "Labor force projections to 2020: a more slowly growing workforce," *Monthly Labor Review*, January 2012.

<sup>iii</sup> The legal definition of HSIs is also available at the links on the Developing HSI Program page on the U.S. Department of Education website at <https://www2.ed.gov/programs/idueshsi/legislation.html>. NSF is reminded of Congress' intent that the NSF HSI target institutions that do not regularly receive NSF, or by extension, other federal STEM, grants.

<sup>iv</sup> NSF, "Federal Science and Engineering Obligations to Universities and Colleges Declines 2% in FY 2015," July 7, 2017, Table 3, <https://www.nsf.gov/statistics/2017/nsf17318/>.

<sup>v</sup> All enrollment numbers from HACU analysis of 2015-16 enrollment data reported in the Integrated Postsecondary Education Data System (IPEDS).

<sup>vi</sup> See, e.g., Education Trust, "Funding Gaps 2015" [http://1k9gl1yevnfp2lpq1dhrqe17-wpengine.netdna-ssl.com/wp-content/uploads/2014/09/FundingGaps2015\\_TheEducationTrust1.pdf](http://1k9gl1yevnfp2lpq1dhrqe17-wpengine.netdna-ssl.com/wp-content/uploads/2014/09/FundingGaps2015_TheEducationTrust1.pdf).

<sup>vii</sup> Anne-Marie Núñez, Gloria Crisp, Diane Elizondo, Mapping Hispanic-Serving Institutions: A Typology of Institutional Diversity, *Journal of Higher Education*, Vol. 87, 2016, Issue 1, Abstract at <http://www.tandfonline.com/doi/abs/10.1080/00221546.2016.11777394>.

<sup>viii</sup> HACU analysis of 2010-11 IPEDS data.

# Proposal and Award Policies and Procedures Guide

## Chapter III: NSF Proposal Processing and Review

### A. Merit Review Principles and Criteria

The National Science Foundation strives to invest in a robust and diverse portfolio of projects that creates new knowledge and enables breakthroughs in understanding across all areas of science and engineering research and education. To identify which projects to support, NSF relies on a merit review process that incorporates consideration of both the technical aspects of a proposed project and its potential to contribute more broadly to advancing NSF's mission "to promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense; and for other purposes." NSF makes every effort to conduct a fair, competitive, transparent merit review process for the selection of projects.

#### 1. Merit Review Principles

These principles are to be given due diligence by PIs and organizations when preparing proposals and managing projects, by reviewers when reading and evaluating proposals, and by NSF program staff when determining whether or not to recommend proposals for funding and while overseeing awards. Given that NSF is the primary Federal agency charged with nurturing and supporting excellence in basic research and education, the following three principles apply:

- All NSF projects should be of the highest quality and have the potential to advance, if not transform, the frontiers of knowledge.
- NSF projects, in the aggregate, should contribute more broadly to achieving societal goals. These broader impacts may be accomplished through the research itself, through activities that are directly related to specific research projects, or through activities that are supported by, but are complementary to, the project. The project activities may be based on previously established and/or innovative methods and approaches, but in either case must be well justified.
- Meaningful assessment and evaluation of NSF funded projects should be based on appropriate metrics, keeping in mind the likely correlation between the effect of broader impacts and the resources provided to implement projects. If the size of the activity is limited, evaluation of that activity in isolation is not likely to be meaningful. Thus, assessing the effectiveness of these activities may best be done at a higher, more aggregated, level than the individual project.

With respect to the third principle, even if assessment of Broader Impacts outcomes for particular projects is done at an aggregated level, PIs are expected to be accountable for carrying out the activities described in the funded project. Thus, individual projects should include clearly stated goals, specific descriptions of the activities that the PI intends to do, and a plan in place to document the outputs of those activities.

These three merit review principles provide the basis for the merit review criteria, as well as a context within which the users of the criteria can better understand their intent.

## 2. Merit Review Criteria

All NSF proposals are evaluated through use of two National Science Board approved merit review criteria. In some instances, however, NSF will employ additional criteria as required to highlight the specific objectives of certain programs and activities.

The two merit review criteria are listed below. Both criteria are to be given full consideration during the review and decision-making processes; each criterion is necessary but neither, by itself, is sufficient. Therefore, proposers must fully address both criteria. (Chapter II C.2.d(i) contains additional information for use by proposers in development of the Project Description section of the proposal.) Reviewers are strongly encouraged to review the criteria, including Chapter II.C.2.d(i), prior to the review of a proposal.

When evaluating NSF proposals, reviewers will be asked to consider what the proposers want to do, why they want to do it, how they plan to do it, how they will know if they succeed, and what benefits could accrue if the project is successful. These issues apply both to the technical aspects of the proposal and the way in which the project may make broader contributions. To that end, reviewers will be asked to evaluate all proposals against two criteria:

- **Intellectual Merit:** The Intellectual Merit criterion encompasses the potential to advance knowledge; and
- **Broader Impacts:** The Broader Impacts criterion encompasses the potential to benefit society and contribute to the achievement of specific, desired societal outcomes.

The following elements should be considered in the review for both criteria:

1. What is the potential for the proposed activity to:
  - a. Advance knowledge and understanding within its own field or across different fields (Intellectual Merit); and
  - b. Benefit society or advance desired societal outcomes (Broader Impacts)?
2. To what extent do the proposed activities suggest and explore creative, original, or potentially transformative concepts?
3. Is the plan for carrying out the proposed activities well-reasoned, well-organized, and based on a sound rationale? Does the plan incorporate a mechanism to assess success?
4. How well qualified is the individual, team, or organization to conduct the proposed activities?
5. Are there adequate resources available to the PI (either at the home organization or through collaborations) to carry out the proposed activities?



## Directorate for Education and Human Resources Summary of EHR Programs by Division (2017)

### Division of Research on Learning in Formal and Informal Settings (DRL)

#### ***AISL: Advancing Informal STEM Learning***

AISL seeks to advance new approaches to, and evidence-based understanding of, the design and development of STEM learning in informal environments; provide multiple pathways for broadening access to, and engagement in STEM learning experiences; advance innovative research on and assessment of STEM learning in informal environments; and engage the public of all ages in learning STEM in informal environments.

FY 2016 Funding: \$62.50 Million

Implementation Year: 1984

URL: [https://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=504793](https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=504793)

Program Officer: Julie Johnson & Monya Ruffin

#### ***DRK-12: Discovery Research PreK-12***

The Discovery Research PreK-12 program (DRK-12) seeks to significantly enhance the learning and teaching of science, technology, engineering and mathematics (STEM) by preK-12 students and teachers, through research and development of STEM education innovations and approaches. Projects in the DRK-12 program build on fundamental research in STEM education and prior research and development efforts that provide theoretical and empirical justification for proposed projects. Projects should result in research-informed and field-tested outcomes and products that inform teaching and learning. Teachers and students who participate in DRK-12 studies are expected to enhance their understanding and use of STEM content, practices and skills.

FY 2016 Funding: \$84.30 Million

Implementation Year: 2007

URL: [https://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=500047](https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=500047)

Program Officer: Robert Ochsendorf

#### ***ITEST: Innovative Technology Experiences for Students and Teachers***

The ITEST program supports research on the design, development, implementation, and selective spread of innovative strategies for engaging students in technology-rich experiences that: increase student awareness of STEM occupations; motivate students to pursue appropriate education pathways to STEM occupations; or develop disciplinary-based knowledge and practices or skills needed for entering STEM workforce sectors.

Funding for this program is provided through H-1B visa application fees.

FY 2016 Funding: \$44.35 million

Implementation Year: 2002

URL: [https://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=5467](https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5467)

Program Officer: David Haury

**STEM+C: Science, Technology, Engineering, and Mathematics + Computing Partnerships**

The STEM + Computing Partnerships program seeks to address the urgent need to prepare students from the early grades through high school in the essential skills, competencies, and dispositions needed to succeed in a computationally-dependent world. STEM+C advances the integration of computational thinking and computing activities in early childhood education through high school (pre-K-12) to provide a strong and developmental foundation in computing and computational thinking through the integration of computing in STEM teaching and learning, and/or the applied integration of STEM content in pre-K-12 computer science education.

FY 2016 Funding: \$51.87 Million

Implementation Year: 2014

URL: [https://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=505006](https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505006)

Program Officer: Arlene de Strulle

**Division of Graduate Education (DGE)**

**SFS: CyberCorps®: Scholarship for Service**

The CyberCorps(R): Scholarship for Service (SFS) program seeks proposals that address cybersecurity education and workforce development. The *Scholarship Track* provides funding to award scholarships to students in cybersecurity. All scholarship recipients must work after graduation for a Federal, State, Local, or Tribal Government organization in a position related to cybersecurity for a period equal to the length of the scholarship. The *Capacity Track* seeks innovative proposals leading to an increase in the ability of the United States higher education enterprise to produce cybersecurity professionals.

FY 2016 Funding: \$49.98 Million

Implementation Year: 2001

URL: [https://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=504991](https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=504991)

Program Officer: Victor Piotrowski

**GRFP: Graduate Research Fellowship Program**

The purpose of GRFP is to help ensure the vitality and diversity of the scientific and engineering workforce of the United States. The GRFP provides three years of support for the graduate education of individuals who have demonstrated their potential for significant achievements in science, technology, engineering, and mathematics, or in STEM education.

FY 2016 Funding: \$166.38 Million

Implementation Year: 1952

URL: [http://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=6201](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=6201)

Program Officer: Gisele Mueller-Parker

**NRT: NSF Research Traineeship**

The NRT program seeks proposals for bold, new, and potentially transformative approaches to STEM graduate education training, to help ensure that graduate students in research-based master's and doctoral degree programs develop the skills, knowledge, and competencies needed to pursue a range of STEM careers. The *Traineeship Track* of NRT focuses on effective training of graduate students in high-priority interdisciplinary research areas. The *Innovations in Graduate Education (IGE)* track focuses on test-bed projects that pilot, test or validate educational approaches to graduate education.

FY 2016 Funding: \$31.03 Million

Implementation Year: 2014

URL: [https://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=505015](https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505015)

Program Officer: Laura Regassa

***PRIME: Promoting Research and Innovative Methodologies for Evaluation***

The PRIME program, within the Project and Program Evaluation (PPE) program, seeks to support research on evaluation with special emphasis on: (1) exploring innovative approaches for determining the impacts and usefulness of STEM education projects and programs; (2) building on and expanding the theoretical foundations for evaluating STEM education and workforce development initiatives, including translating and adapting approaches from other fields; and (3) growing the capacity and infrastructure of the evaluation field.

FY 2016 Funding (for PPE): \$14.57 Million

URL: [https://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=504995&org=NSF](https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=504995&org=NSF)

Program Officer: Finbarr (Barry) Sloane

**Division of Human Resource Development (HRD)**

***ADVANCE: Increasing the Participation and Advancement of Women in Academic Science and Engineering Careers***

The goals of the ADVANCE program are to develop systemic approaches to increase the representation and advancement of women in academic STEM careers; to develop innovative and sustainable ways to promote gender equity that involve both men and women in the STEM academic workforce; and to contribute to the research knowledge base on gender equity and the intersection of gender and other identities in STEM academic careers.

FY 2016 Funding: \$1.48 Million

Implementation Year: 2001

URL: [http://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=5383](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5383)

Program Officer: Jessie DeAro

***AGEP: Alliances for Graduate Education and the Professoriate***

The AGEP program seeks to increase the number of historically underrepresented minority faculty in STEM disciplines and STEM education research fields by advancing knowledge about pathways to career success. The program objectives include supporting the development, implementation and study of innovative models of doctoral education, postdoctoral training, and faculty advancement for historically underrepresented minorities in specific STEM disciplines and/or STEM education research fields; and advancing knowledge about the underlying issues, policies and practices that have an impact on the participation, transitions and advancement of historically underrepresented minorities in the STEM academy.

FY 2016 Funding: \$8.00 Million

Implementation Year: 1994

URL: [https://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=5474](https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5474)

Program Officer: Mark Leddy

***CREST: Centers of Research Excellence in Science and Technology***

CREST provides support to enhance the research capabilities of minority-serving institutions (MSIs) through the establishment of centers that effectively integrate education and research.

FY 2016 Funding: \$24.04 Million

Implementation Year: 1987

URL: [https://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=6668](https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=6668)

Program Officer: Victor Santiago

***EASE: Excellence Awards in Science and Engineering***

EASE funding supports the Presidential Awards for Excellence in Science, Mathematics and Engineering Mentoring (PAESMEM) and Presidential Awards for Excellence in Mathematics and Science Teaching (PAEMST) programs. NSF manages PAESMEM and PAEMST on behalf of the White House Office of Science and Technology Policy. PAESMEM are the highest honors that the United States government bestows upon mentors who work to expand STEM talent. PAEMST represent the highest honors bestowed by the United States government for K-12 mathematics and science (including computer science) teaching.

FY 2016 Funding: \$5.59 Million

Implementation Year: PAESMEM – 1995; PAEMST – 1983

URL (PAESMEM): [https://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=5473](https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5473)

URL (PAEMST): <https://www.paemst.org/>

Program Officer: PAESMEM – Martha James; PAEMST – Nafeesa Owens

***HBCU-UP: Historically Black Colleges and Universities Undergraduate Program***

HBCU-UP is committed to enhancing the quality of undergraduate STEM education and research at HBCUs to broaden participation in the nation's STEM workforce. To this end, HBCU-UP provides awards to develop, implement, and study evidence-based innovative models and approaches for improving the preparation and success of HBCU undergraduate students so that they may pursue STEM graduate programs and/or careers.

FY 2016 Funding: \$35.01 Million

Implementation Year: 1998

URL: [http://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=5481](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5481)

Program Officer: Claudia Rankins

***LSAMP: Louis Stokes Alliances for Minority Participation***

The principal goal of the LSAMP program is to help to diversify the nation's science, technology, engineering and mathematics (STEM) workforce by funding institutions using an alliance model to implement evidence-based strategies for recruitment, retention and STEM degree completion of students historically underrepresented in STEM disciplines. Such students include African-Americans, Hispanics, Native Americans, Native Hawaiians/Pacific Islanders and Alaska Natives. A secondary goal of the program is to support the design, implementation, evaluation/research and dissemination of comprehensive recruitment and retention interventions.

FY 2016 Funding: \$46.01 Million

Implementation Year: 1991

URL: [https://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=13646](https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13646)

Program Officers: A. James Hicks

***TCUP: Tribal Colleges and Universities Program***

TCUP provides awards to Tribal Colleges and Universities, Alaska Native- and Native Hawaiian-serving institutions of higher education to increase their capacity for high-quality research and education in STEM disciplines (including sociology, psychology, anthropology, economics, and other social and behavioral sciences, as well as natural sciences).

FY 2016 Funding: \$14.01 Million

Implementation Year: 2001

URL: [http://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=5483](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5483)

Program Officer: Lura (Jody) Chase

**Division of Undergraduate Education (DUE)*****ATE: Advanced Technological Education***

With an emphasis on two-year colleges, ATE focuses on the education of technicians for the high-technology fields that drive our nation's economy. The program involves partnerships between academic institutions and industry to promote improvement in the education of science and engineering technicians at the undergraduate and secondary school levels. The ATE program supports curriculum development; professional development of college faculty and secondary school teachers; career pathways; and other activities.

FY 2016 Funding: \$66.04 Million

Implementation Year: 1994

URL: [http://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=5464](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5464)

Program Officer: Celeste Carter

***IUSE: EHR: Improving Undergraduate STEM Education: Education and Human Resources***

IUSE funds research that advances understanding of effective teaching and learning practices in undergraduate education. It also funds translation of those research results into practice at local, institutional, and national scales. To accomplish these goals, IUSE supports a broad range of activities, including workshops, conferences, faculty development programs, course redesign efforts, and departmental, institutional, and multi-institutional transformation projects. The program features two tracks: (1) Engaged Student Learning and (2) Institutional and Community Transformation. There are two tiers of projects within each track: (i) Exploration and Design and (ii) Development and Implementation.

FY 2016 Funding: \$87.00 Million

Implementation Year: 2014

URL: [https://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=505082](https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505082)

Program Officer: Myles Boylan

***NOYCE: Robert Noyce Teacher Scholarship Program***

NOYCE seeks to encourage talented science, technology, engineering, and mathematics majors and professionals to become K-12 STEM teachers. The program welcomes proposals from institutions of higher education to enable STEM degree recipients to pursue K-12 teaching careers in high needs school districts, as well as fellowships to STEM professionals to earn teaching certifications or Master Teacher credentials.

FY 2016 Funding: \$64.50 Million

Implementation Year: 2002

URL: [https://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=5733](https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5733)

Program Officer: Sandra Richardson

***S-STEM: NSF Scholarships in Science, Technology, Engineering, and Mathematics Program***

S-STEM makes grants to institutions of higher education to support scholarships and co-curricular programming for academically talented students demonstrating financial need. This support enables students to complete an associate's, baccalaureate, or graduate degree in STEM disciplines, so they are prepared to enter the STEM workforce or to pursue a graduate degree in STEM. By an act of Congress, funding for this program is sourced from H-1B visa application fees.

FY 2016 Funding: \$140.54 Million

Implementation Year: 2000

URL: [https://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=5257](https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5257)

Program Officer: Ron Buckmire

## EHR-Wide Investment

### ***ECR: EHR Core Research***

ECR provides funding in critical research areas that are essential, broad, and enduring. EHR seeks proposals that will help synthesize, build and/or expand research foundations. This solicitation is led and managed by EHR.

There are four core research areas: ECR STEM Learning led by DRL (\$25.65 million), ECR STEM Professional Workforce Preparation led by DGE (\$16.00 million), ECR Broadening Participation and Institutional Capacity in STEM led by HRD (\$12.90 million), and ECR STEM Learning Environments led by DUE (\$13.02 million.)

FY 2016 Funding: \$67.57 Million

Implementation Year: 2014

URL: [https://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=504924](https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=504924)

Program Officer: Karen King



## National Science Foundation

4201 Wilson Boulevard Arlington, Virginia 22230

Recently, as part of the bill that funds the National Science Foundation (NSF) for FY 2017, Congress directed NSF to establish a new program to support Hispanic-Serving Institutions (HSI) and encouraged NSF to use this program “to build capacity at institutions of higher education that typically do not receive high levels of NSF funding.” In response, NSF released a [Dear Colleague Letter](#) announcing its intention to establish such a program in FY 2018 and inviting the submission of conference proposals to identify challenges and opportunities regarding undergraduate STEM education at 2-year and 4-year HSIs.

In addition to the advice NSF will receive from these conference projects, the agency wishes to further engage the HSI academic community in the conversation. Therefore, NSF plans to hold three virtual listening sessions in mid-August 2017 (details below). Each session will accommodate up to 150 participants, so we ask that each institution limit its participation to no more than 3 faculty/staff members.

**The session dates are as follows:**

**August 15, 2017 (Tuesday) for two-year colleges only**

**August 16, 2017 (Wednesday) for 4-year institutions only**

**August 18, 2017 (Friday) for both 2-year and 4-year HSIs**

Schedule below shows EDT times for all meetings

<b><i>Start time (EDT)</i></b>	<b><i>End Time (EDT)</i></b>	<b><i>Description</i></b>
12:00 pm	12:10 pm	Meeting starts with: Introductory remarks by NSF staff
12:10 pm	2:50 pm	Open Discussion- with facilitator providing the guiding statement and moderating Q & A
2:50 pm	3:00 pm	Closing remarks- NSF staff

Prior to the sessions, please access (<https://www.surveymonkey.com/r/EHRHSCriticalNeeds>) which describes topics that will guide the listening session.

The sessions are audio only and operator-assisted.

WebEx (<https://nsf.webex.com/mw3100/mywebex/default.do?siteurl=nsf>) will be used for registration purposes only. If you do not see the event listed please click “Event Center” from the menu bar. Register to one of the three options (August 15- 2 year colleges only, August 16- 4 year institutions, August 18 both 2-year and 4-year institutions). Following registration, instructions for accessing the audio conference will be sent to you via WebEx.

Registration is limited to 150 participants per session. Please select only one date. Registration will be open for up to two weeks or until the registration limits are reached.

For additional information regarding the listening session, please email: [nsf-ehr-hsi@nsf.gov](mailto:nsf-ehr-hsi@nsf.gov). Interested participants who are unable to attend a listening session may access <https://www.surveymonkey.com/r/EHRHSCriticalNeeds>) to provide feedback to NSF.

From the

Hispanic Serving Institutions Program Working Group  
National Science Foundation  
Directorate for Education and Human Resources  
[nsf-ehr-hsi@nsf.gov](mailto:nsf-ehr-hsi@nsf.gov)



[Home \(/\)](#)

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**NSF 17-092**

# Dear Colleague Letter: Improving Undergraduate STEM Education in Hispanic Serving Institutions (HSIs)

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June 6, 2017

Dear Colleagues:

With this Dear Colleague Letter (DCL), the National Science Foundation (NSF) is calling for submission of conference proposals to inform the design of NSF's new Hispanic-Serving Institution (HSI) program, to be established in fiscal year 2018. Proposed conferences are expected to result in the identification of the most critical challenges and opportunities regarding undergraduate STEM education at two-year and four-year Hispanic-Serving institutions of higher education, and potential actionable solutions that fall within NSF's mission, policies, and practices.

## **BACKGROUND**

NSF has a long-term commitment to broadening the participation of underrepresented groups in science, technology, engineering, and mathematics (STEM) education and careers. A key component of that commitment is increasing the participation, retention, and graduation rates of underrepresented minorities seeking associate or baccalaureate degrees in STEM fields. Coincident with these aims, NSF is pleased to inform our colleagues that we intend to establish a program for Hispanic-Serving Institutions (HSIs)<sup>1</sup> in FY 2018, per the President's FY 2018 Budget Request to Congress. This program will focus on undergraduate STEM education at HSIs. NSF also will continue to accept proposals from HSIs to any program in the Foundation for which they are eligible; in FY 2016, NSF funded awards to 91 HSIs.

## **SUBMISSION DEADLINES**

July 6, 2017 for funding in FY 2017.

July 7-September 30, 2017 for funding in FY 2018.

Note: This DCL will be active through September 30, 2017.

## **FUNDING LEVEL AND DURATION**

Requests may be up to \$100,000. NSF intends that the proposed conferences, as submitted to this DCL, will be held early in FY 2018.

## **SPECIAL INSTRUCTIONS**

Conference proposals will be accepted from a Principal Investigator (PI) or any consortium of investigators led by a PI at any eligible U.S. institution. A PI may lead only one conference proposal pursuant to this DCL. Conference proposals must be prepared and submitted in accordance with the preparation instructions in Chapter II.E.7 of the [NSF Proposal and Award Policies and Procedures Guide](#) <[https://www.nsf.gov/publications/pub\\_summ.jsp?ods\\_key=pappg](https://www.nsf.gov/publications/pub_summ.jsp?ods_key=pappg)> (NSF 17-1 <[https://www.nsf.gov/publications/pub\\_summ.jsp?ods\\_key=pappg](https://www.nsf.gov/publications/pub_summ.jsp?ods_key=pappg)> ) and submitted via FastLane or Grants.gov. Proposals should be directed to the Improving Undergraduate STEM Education (IUSE) program: [https://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=505082](https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505082) <[https://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=505082](https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505082)>.

Project titles should begin with the prefix "HSI Conference".

Proposals will be reviewed as they are submitted.

Proposals that fail to address the thrust of this DCL will be returned without review.

## **POINT OF CONTACT**

Please send email inquiries about this DCL to [nsf-ehr-hsi@nsf.gov](mailto:nsf-ehr-hsi@nsf.gov) (<mailto:nsf-ehr-hsi@nsf.gov>).

Sincerely,

W. James Lewis  
Assistant Director (Acting)  
Directorate for Education & Human Resources

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<sup>1</sup> For the purposes of this Dear Colleague Letter, a Hispanic-Serving Institution will be defined as any institution that has 25 percent or more undergraduate full-time equivalent Hispanic enrollment.

National Science Foundation, 4201 Wilson Boulevard, Arlington, Virginia 22230, USA Tel: (703) 292-5111, FIRS: (800) 877-8339 | TDD: (800) 281-8749

**Award Number: 1748526**

**HSI Conference: Transforming STEM Education in Hispanic Serving Institutions - Regional Insights from the Southwest**

**Investigator(s):** Guadalupe Lozano, guada@math.arizona.edu (Principal Investigator); Marla Franco (Co-Principal Investigator); William Velez (Co-Principal Investigator); Vignesh Subbian (Co-Principal Investigator); Anna O'Leary (Co-Principal Investigator)

**Sponsor:** University of Arizona, 888 N. Euclid Ave, Tucson, AZ, 85719-4824

The National Science Foundation (NSF) Dear Colleague Letter NSF 17-092: Improving Undergraduate STEM Education in Hispanic Serving Institutions (HSIs) calls for projects to support conferences that will identify the most critical challenges and opportunities regarding undergraduate science, technology engineering and mathematics (STEM) education at HSIs, and potential actionable solutions that fall within NSF's mission, policies, and practices.

The University of Arizona (UA) proposes a regional conference that brings together up to 100 students, faculty, practitioners, and administrators from southwestern 2- and 4-year Hispanic-Serving Institutions (HSIs). Workshop participants will be recruited from the 150 HSIs in Arizona, New Mexico and California. The 3-day workshop will focus on five topics relevant to STEM undergraduate education: (1) Enabling transitions from 2- to 4-year HSIs: gaps and opportunities for cross-institutional partnerships, (2) Charting the role of Research 1 (R1) HSIs in undergraduate STEM education: research as a pathway for college and career success, (3) Leveraging innovative and inclusive pedagogies and curricula: gaps and opportunities for new instructional initiatives, (4) Mapping HSI opportunities and challenges to recruitment, retention, and persistence: successful examples and potential new initiatives, and (5) Meeting HSI students where they are: the meaning and role of culturally-responsive STEM education at the college level.

The workshop is expected to result in a report that is focused on the regional challenges and opportunities of HSIs in the southwest. The workshop participants will work toward identifying priority areas for improving STEM education in HSIs. The outcomes of the conference will: (1) serve to advance knowledge regarding critical gaps and opportunities in bolstering the educational mission of HSIs that are demographically and geographically situated in the Southwestern United States, (2) identify and characterize models of institutional collaboration that best serve the needs of Hispanic students within and across science, engineering, and mathematics education, (3) improve our understanding of effective practices for generating sustained interest and success in STEM fields among Hispanics, and (4) synthesize evidence from ethnographic research to inform institutional change, pedagogy, and STEM curricula in HSIs.

**Award Number: 1748570**

**HSI Conference: Pathways for Hispanic Students in STEM**

**Investigator(s):** Michael Dennin, mdennin@uci.edu (Principal Investigator); Di Xu (Co-Principal Investigator); Douglas Haynes (Co-Principal Investigator)

**Sponsor:** University of California-Irvine, 141 Innovation Drive, Suite 250, Irvine, CA, 92617-3213

The National Science Foundation (NSF) Dear Colleague Letter NSF 17-092: Improving Undergraduate STEM Education in Hispanic Serving Institutions (HSIs) calls for projects to support conferences that will identify the most critical challenges and opportunities regarding undergraduate science, technology engineering and mathematics (STEM) education at HSIs, and potential actionable solutions that fall within NSF's mission, policies, and practices. In keeping with this call, the principal investigators of this project observe that while campus faculty and administrators work with students in their classrooms and offices every day, they are rarely presented with data about overall student success by demographic or preparation level. This group is also rarely asked to collaborate to build recommendations for actionable solutions. The proposed conference aims to address both these oversights by creating an expert community to address Educational Pathways for Hispanic Students in STEM. Hispanic students, whether attending a 2-year or 4-year college, experience a high rate of derailment from pursuing STEM degrees. Impediments tend to arise at transition points, namely from high school to college, in early college, and from community college to 4-year university. The conference focuses on the critical transitions that students must negotiate from high school to successful graduation with a Bachelor's degree. These issues are relevant to Hispanic students across the nation, and more broadly, to other groups of underrepresented students who face significant challenges in pursuing their higher education goals. Conference attendees will be primarily and faculty and administrators from local high schools and 2-year and 4-year colleges, emphasizing those that serve Hispanic students. The conference's goals are twofold: to educate key faculty and administrators about known research regarding Hispanic students in STEM, and to produce a set of recommendations to help NSF identify critical challenges, best practices, and potential actionable solutions for undergraduate STEM education.

The University of California, Irvine (UCI) proposes to convene scholars from Southern California for a three-day conference in response to NSF's call for identification of critical challenges and opportunities in undergraduate STEM education at two-year and four-year Hispanic-serving institutions. The conference's ultimate purpose is to advance an important national goal: improving retention and graduation rates for Hispanic students in STEM in higher education institutions nationwide. The conference will be interactive and is intentionally designed to be both a learning experience and data collection exercise. Primary topics are: 1) Moving Students from High School to College (2 or 4-year) with a Declared STEM Major; 2) Initial Challenges for STEM College Students (2 and 4-year); 3) Challenges Specific to Community College Students; 4) Transfer Students and Their Challenges; and 5) Data and Analytics: Challenges and Promise. After hearing from a number of experts, the conference attendees will create working groups that will gather and organize evidence-based solutions that may be supported by NSF. Conference proceedings will be written summarizing information delivered at the conference. Recommendations for designing an HSI program at NSF will be developed by the group and widely disseminated. Assessment will be used to gather information for the conference proceedings.

**Award Number: 1748199**

**HSI Conference: Hispanic-focused STEM Ideas for Inspiration and Innovation**

**Investigator(s):** Meline Kevorkian, melinek@nova.edu (Principal Investigator); Gregory Simco (Co-Principal Investigator); Mercedes Fernandez (Co-Principal Investigator); Heather Belmont (Co-Principal Investigator); Michael Pullin (Co-Principal Investigator)

**Sponsor:** Nova Southeastern University, 3301 College Ave., Ft. Lauderdale, FL, 33314-7796

The National Science Foundation (NSF) Dear Colleague Letter NSF 17-092: Improving Undergraduate STEM Education in Hispanic Serving Institutions (HSIs) calls for projects to support conferences that will identify the most critical challenges and opportunities regarding undergraduate science, technology engineering and mathematics (STEM) education at HSIs, and potential actionable solutions that fall within NSF's mission, policies, and practices. In response to this call Nova Southeastern University is partnering with Broward College, Miami-Dade College, and Excelencia in Education to host the "Hispanic-focused STEM Ideas for Inspiration and Innovation (HSI3) Conference" in Ft. Lauderdale, FL, in December 2017. Conference topics are intentionally designed to motivate HSI faculty, staff and administrators from across the nation to develop and transform high-quality ideas into inventive actionable solutions to be submitted to the new NSF HSI grant program and other funding sources.

The conference agenda will focus on two-year/four-year STEM pathways and collaboration involving HSIs including undergraduate STEM research and industry experiences and identifying and leveraging resources. Partnering among a 4-year institution and two long-standing community college HSIs ensures that both lower division and upper division perspectives will be reflected in every aspect of the conference, from participant marketing to presentation content, to Work Session discussions. Formal presentations, coupled with numerous opportunities for participants to engage with each other during Work Sessions and more informal networking breaks and meals, allows participants structured and unstructured time to consider inter-related common challenges, best practices, and to influence the development of innovative ideas that can be implemented institutionally through new or enhanced two-year/four-year partnerships. Innovative ideas and inspired collaborations will continue to evolve after the conference via the HSI STEM listserv/ mailing list that Nova Southeastern University will create and maintain.

**Award Number: 1748533**

**HSI Conference: Understanding and Improving Readiness and Student Transitions**

**Investigator(s):** Andrew Hamilton, ahamilton@uh.edu (Principal Investigator)

**Sponsor:** University of Houston, 4800 Calhoun Boulevard, Houston, TX, 77204-2015

The National Science Foundation (NSF) Dear Colleague Letter NSF 17-092: Improving Undergraduate STEM Education in Hispanic Serving Institutions (HSIs) calls for projects to support conferences that will identify the most critical challenges and opportunities regarding undergraduate science, technology engineering and mathematics (STEM) education at HSIs, and potential actionable solutions that fall within NSF's mission, policies, and practices. The University of Houston will host a two-day conference where the most salient challenges and opportunities will be addressed with a special focus on three important transition points for Hispanic STEM students: the transition from high school to post-secondary education; the transition from community college to university; and the transition from college to the workforce or to graduate/professional school.

An organizing committee is charged with bringing energy and attention to the three critical aspects of student development that form the conference themes. The conference will not only make clear what research is currently available, but will also highlight areas critical for further investigation. The conference will include sixty participants for the main agenda, as well as twenty-five presidents and chief academic officers for the "HSI Presidents' Convening". The meeting will be organized and conducted with the goals to: 1) synthesize a well-informed and detailed understanding of the most important challenges facing HSIs now and in the decade, with special attention to college readiness, university readiness, and workforce or graduate/professional school readiness; 2) identify key strategies, initiatives, and programs that are likely to address these challenges and opportunities effectively; and 3) return conferees to their campuses with a strong sense of what is working well on HSI campuses now. The conference will frame an important set of student-transition issues for further discussion and will explore and disseminate practices, programs, and strategies that have been demonstrated empirically to be efficacious.

**Award Number: 1450661**

**HSCC Kickstarter: Providing Hispanic-Serving Community Colleges with Technical Assistance to Improve Their Federal Funding Competitiveness**

**Investigator:** Caroline Van Ingen-Dunn, [cvaningen-dunn@sfaz.org](mailto:cvaningen-dunn@sfaz.org)

**Sponsor:** Science Foundation Arizona

The HSCC KickStarter project will provide Hispanic-Serving Community Colleges (HSCCs) with technical assistance to improve their readiness and competitiveness for federal grant programs in the science, technology, engineering and mathematics (STEM) fields. HSCCs have large enrollments of Hispanic and low-income students and are therefore important partners for increasing the participation of diverse individuals in STEM education programs and careers. Many HSCCs have not been successful in securing federal grant projects, which is often attributed to the lack of infrastructure at HSCCs to develop and implement large federal grants. This project will increase the numbers of HSCCs that successfully pursue federal grants, particularly from the National Science Foundation, ultimately increasing recruitment and retention in STEM through enhancements to these institutions' STEM curricula, strengthening ties to industry and community partners, and developing robust articulation pathways to four-year STEM programs. The KickStarter project will provide intensive technical assistance to 10-15 HSCCs. In addition, all community colleges in the country will have an opportunity to benefit from access to the tools, materials, and lessons learned through KickStarter webinars and conference presentations.

The KickStarter team will implement an innovative and comprehensive technical assistance model designed to address the issues associated with the HSCCs' low level of success in submitting and securing federal STEM grant proposals. According to the proposers, the issues most often cited in reviews of declined federal proposals include the lack of readiness to conceive, justify, and execute complicated projects. The KickStarter technical assistance model will address these issues by developing a "Readiness Framework" in collaboration with the HSCCs. The framework will be based on institutional self-evaluation of student support services, industry engagement, and technology and curricular alignment. This framework will guide the development of STEM proposals that demonstrate capacity for project implementation and align with the institutional mission and STEM education goals of the HSCC. The KickStarter team has expertise in building community college partnerships with industry and community organizations, and deep knowledge of and experience with federal grant programs and grant management. This project has the potential to become a technical assistance model for other minority-serving community colleges, such as two-year Historically Black Colleges and Tribal Colleges.

The mission of *Excelencia* in Education is to accelerate Latino student success in higher education. A critical group of institutions enrolling and graduating Latino students are Hispanic-Serving Institutions (HSIs).

## Summary of the 2015-16 HSI List

In the 1980s, leaders recognized a small set of institutions enrolled a large percentage of Latino students but had low levels of resources to educate these students. The classification of Hispanic-Serving Institutions (HSIs) formally recognized these institutions for capacity-building and other support.

HSIs are defined in federal law as accredited and degree-granting public or private nonprofit institutions of higher education with 25 percent or more total undergraduate Hispanic full-time equivalent (FTE) student enrollment. These institutions were first recognized in federal law in 1994 in the creation of the Developing HSIs program.<sup>1</sup>

In 2015-16, 472 institutions met the enrollment definition of HSIs, enrolling 64 percent of Latino undergraduates, and representing 14 percent of institutions of higher education.

The list of institutions identified as HSIs in this analysis is not intended to designate eligibility for any specific program; rather, the list is meant to assist in considering and analyzing the institutions that meet the basic legislative definition of a Hispanic-Serving Institution. The following list of HSIs was created using data from the Integrated Postsecondary Education Data System (IPEDS).<sup>2</sup>

### Location

State/Location	# HSIs
Arizona	13
California	159
Colorado	9
Connecticut	4
Florida	27
Illinois	21
Indiana	1
Kansas	4
Massachusetts	5
Nevada	4
New Jersey	17
New Mexico	23
New York	25
Ohio	1
Oregon	3
Pennsylvania	1
Puerto Rico	65
Tennessee	1
Texas	83
Washington	6
<b>Total:</b>	<b>20</b>

### Sector

Key	Sector	# HSIs	% of HSIs*
<b>1</b>	Public, 4-year or above	105	22%
<b>2</b>	Public, 2-year	209	44%
<b>3</b>	Private not-for-profit, 4-year or above	134	29%
<b>4</b>	Private not-for-profit, 2-year	24	5%
	<b>Total:</b>	<b>472</b>	<b>100%</b>

### Hispanic/Latino Enrollment

Hispanic/Latino FTE Enrollment	# HSIs	% of HSIs
<100	33	7%
100 – 1,000	159	34%
1,001 – 2,000	85	18%
2,001 – 3,000	45	9%
3,001 – 4,000	45	9%
4,001 – 5,000	36	8%
5,001 – 10,000	50	11%
> 10,000	19	4%
<b>Total:</b>	<b>472</b>	<b>100%</b>

### Total FTE Enrollment at HSIs

Race/Ethnicity	Undergraduate
Hispanic/Latino	1,248,817
All students	2,713,354
<b>% Latino:</b>	<b>46%</b>

### Degree of Urbanization

Type	% of HSIs*
City	52%
Suburb	32%
Town	9%
Rural	7%
<b>Total:</b>	<b>100%</b>

<sup>1</sup> Summary of Title V of the Higher Education Act, as amended in 2008. To be eligible for the "Developing HSIs Program", the law further requires that an HSI have a high enrollment of needy students and low educational and general expenditures.

<sup>2</sup> IPEDS is a system of surveys designed to collect institution-level data from all primary providers of postsecondary education. IPEDS is maintained at the National Center for Education Statistics (NCES), U.S. Department of Education.

The mission of *Excelencia* in Education is to accelerate Latino student success in higher education. A critical set of institutions enrolling Latino students is Hispanic-Serving Institutions (HSIs).

Over half of all Latino undergraduate students in higher education (64%) are enrolled in 14 percent of institutions in the United States identified as Hispanic-serving Institutions (HSIs).

HSIs are defined in federal law as accredited and degree-granting public or private nonprofit institutions of higher education with 25 percent or more total undergraduate Hispanic full-time equivalent (FTE) student enrollment.<sup>1</sup> While there were 472 institutions that met the HSI enrollment criteria in 2015-16, there were also 323 institutions that had between 15 and 24 percent undergraduate FTE Hispanic enrollment. *Excelencia* in Education identifies these institutions as emerging HSIs.

**Summary of the 2015-16 Emerging HSI List**

While emerging HSIs do not have the critical mass of Latino student enrollment required to meet the definition of an HSI, these institutions may soon meet the criteria as their enrollment grows and Latino representation increases. The following list of emerging HSIs was created using data from the Integrated Postsecondary Education Data System (IPEDS).<sup>2</sup>

**Sector**

Key	Sector	# Emerging HSIs	% of Emerging HSIs
1	Public, 4-year or above	69	21%
2	Public, 2-year	102	32%
3	Private not-for-profit, 4-year or above	142	44%
4	Private not-for-profit, 2-year	10	3%
<b>Total:</b>		<b>323</b>	<b>100%</b>

**FTE Enrollment at Emerging HSIs**

Race/Ethnicity	Undergraduate
Hispanic/Latino	316,705
All	1,595,374
<b>% Latino:</b>	<b>20%</b>

**Degree of Urbanization**

Degree of Urbanization	% of all HSIs
City	51%
Suburb	29%
Town	9%
Rural	11%
<b>Total:</b>	<b>100%</b>

**Location**

State/Location	# Emerging HSIs
Alabama	1
Arizona	16
Arkansas	2
California	56
Colorado	15
Connecticut	12
District of Columbia	1
Florida	29
Georgia	2
Hawaii	1
Idaho	4
Illinois	26
Indiana	3
Iowa	2
Kansas	6
Louisiana	2
Maryland	1
Massachusetts	10
Michigan	1
Missouri	1
Nebraska	5
Nevada	4
New Jersey	10
New Mexico	2
New York	32
North Carolina	2
Oklahoma	2
Oregon	6
Pennsylvania	6
Rhode Island	2
Tennessee	1
Texas	50
Utah	2
Virginia	3
Washington	3
Wisconsin	2
<b>Total:</b>	<b>36</b>
	<b>323</b>

<sup>1</sup> Summary of Title V of the Higher Education Act, as amended in 2008. To be eligible for the "Developing HSIs Program", the law further requires that an HSI have a high enrollment of needy students and low educational and general expenditures.

<sup>2</sup> IPEDS is a system of surveys designed to collect from all primary providers of postsecondary education institution-level data and is maintained by the National Center for Education Statistics (NCES), U.S. Department of Education.

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Los Angeles Community College District (CA)**



Dr. Francisco Rodriguez has been Chancellor of the Los Angeles Community College District since June 2014. Prior to his appointment as head of the nation's largest community college district, Dr. Rodriguez served as superintendent/president at MiraCosta Community College District (Oceanside, CA) and as president at Cosumnes River College (Sacramento, CA). With 30 years of experience as an educator, faculty member, and administrator within California public higher education, Dr. Rodriguez is a noted scholar and speaker on topics ranging from higher education, student access and success, governance and governing boards, to workforce development, fundraising, and philanthropy. Dr. Rodriguez serves on national panels, including the board of directors of the National Endowment for Financial Education, and the Board of Higher Education and Workforce of the National Academy of Sciences. Dr. Rodriguez earned a BA in Chicano Studies with an emphasis in education and a MS in Community Development, both from the University of California-Davis. He also earned a PhD in Education from Oregon State University.

**Irma Becerra, PhD  
Provost and Chief Academic Officer  
St. Thomas University (FL)**



Prior to taking office at St. Thomas University in 2014, Dr. Becerra worked at Florida International University (FIU) for 23 years. Dr. Becerra's research focuses on knowledge management (KM), KM systems, business intelligence, enterprise systems, disaster management, and IT entrepreneurship. She founded the FIU Knowledge Management Lab and has led multi-million dollar projects as principal investigator funded by the National Science Foundation, NASA and the Air Force Research Lab. She has published extensively in leading journals, authored three books, and has delivered presentations and keynote addresses at NASA Centers, the NAVY Research Lab, universities around the world, and international conferences with both an academic and a practitioner focus. She was a prior faculty director for the Masters in Management Information Systems (MIS) and the MIS PhD programs. Dr. Becerra was the first female to receive a PhD from FIU's Engineering Program. She earned her PhD in 1994 in electrical engineering and her Masters and Bachelors, also in electrical engineering, from the University of Miami.

**Carlos Castillo-Chavez, PhD (EHR AC Member)**  
**Professor**  
**Arizona State University (AZ)**



Carlos Castillo-Chavez is Joaquin Bustoz Jr. Professor of Mathematical Biology at Arizona State University. In 2008 he became the founding director of the Mathematical, Computational and Modeling Sciences Center and the founding director of the applied mathematics in the life and social sciences programs at ASU. Castillo-Chavez is also the Executive Director of two institutes: The Mathematical and Theoretical Biology Institute or MTBI which focuses on providing research opportunities at the interface of the biological, computational and mathematical sciences from the undergraduate to the graduate and postdoctoral levels and The Institute for Strengthening the Understanding of Mathematics and Science (SUMS), which focuses on providing college opportunities to high school students. These institutes provide university experiences for students of economically disadvantaged groups with the goal of increasing the number of underrepresented minorities who earn a PhD and take positions of leadership in the mathematical sciences or in fields that require high levels of quantitative expertise.

**Nora Garza, PhD**  
**Vice President for Resource Development**  
**Laredo Community College (TX)**



Dr. Nora Garza has devoted 39 years to education at Laredo Community College. She earned her PhD in Educational Administration, Community College Leadership from the University of Texas at Austin in 1994 and in 1996 was promoted to Dean of Arts and Sciences. She has represented LCC and Laredo in various capacities such as AAUW Laredo President, as the first Hispanic AAUW Texas President, and as the founding president of the Texas Hispanic Serving Institutions Consortium. Dr. Garza's grant awards have secured 40% funding for the Joaquin Cigarroa Science Lab Building, endowments for scholarships, computer technology and services for students and scientific equipment for faculty and staff. To date Dr. Garza has secured over \$20 million for Laredo Community College and educational institutions in Laredo and Texas and over \$1 million in endowments. She has written, administered and evaluated multiple grants. She serves as the Vice President for Resource Development and as Project Director for Title V grants.

**José Herrera, PhD**  
**Provost and Vice President of Academic Affairs**  
**Mercy College (NY)**



José Herrera was named Mercy College's Provost and Vice President of Academic Affairs in January 2017. Prior to this appointment, Dr. Herrera was founding Dean of the College of Arts and Sciences and Associate Vice President for Academic Affairs at Western New Mexico University. He also served as a Program Director at the National Science Foundation in the Division of Undergraduate Education from 2011-2013. A native of Chicago, he graduated from the Chicago Public School system at age 15 before attending Northern Illinois University where he majored in biology and minored in chemistry, graduating *magna cum laude* in 1988 and with a master's degree in biology. He earned his PhD at Kansas State University in 1996 in microbiology. He worked in the Department of Biology at Truman State University and served as department chair from 2009-2011. In 2015 he was elected vice-chair of the Gordon Research Conference on Undergraduate Biology Education Research in Easton, MA. He is a lifetime member of the Society for the Advancement of Chicanos and Native Americans in Science and Senior Editor and Handling Editor of two pre-eminent biology education journals: *Life Science Education* and *BioScience*.

**Daniel J. Howard, PhD**  
**Executive Vice President and Provost**  
**New Mexico State University (NM)**



Dr. Daniel Howard has been New Mexico State University's Executive Vice President and Provost since August 2013. He is the chief academic officer of NMSU, and the Provost's office is dedicated to all aspects of instruction, student success, research, extension education, and public service. As Provost, Dr. Howard directs efforts critical to the strategic interests of NMSU and its land grant mission. The academic success of NMSU students continues to be a top priority, and the Office of the Provost supports their success through efforts such as Student Success Navigators and the Aggie Pathway to the Baccalaureate. Dr. Howard started his career at NMSU as an Assistant Professor of Biology in 1988. A distinguished member of the faculty, he earned recognition as a Regents Professor and served as Head of the Department of Biology. Under his leadership, the department secured the first Howard Hughes Medical Institute Improvement of Undergraduate Science Education grant at NMSU. Before becoming Provost, Dr. Howard spent five years at the University of Colorado Denver as Dean of the College of Liberal Arts and Sciences.

**Richard A. Levao, JD**  
**President**  
**Bloomfield College (NJ)**



Mr. Levao received an AB with High Distinction in Political Science from Rutgers College and earned a JD with Specialization in International Affairs from The Cornell Law School. For 29 years, he practiced law until he became President of Bloomfield College in June 2003. Active in community affairs and New Jersey higher education, Levao has served for 25 years as a member of the Rutgers University Board of Trustees and Board of Governors, including three years as Chair of the Board of Trustees and two years as Chair of the Board of Governors. He currently serves as Chair of the Association of Independent Colleges and Universities, as Secretary of the New Jersey Presidents' Council, and as a member of the Scholarship Selection Committee of the New Jersey Congressional Black Caucus Foundation. He also served on the Board of Trustees of the Woodrow Wilson National Fellowship Foundation and the Executive Committees of the Association of Presbyterian Colleges and Universities, the National Association of Independent Colleges and Universities and the New Jersey Council on the Humanities, the state's affiliate to the National Endowment for the Humanities.

**George Martin, PhD  
President  
St. Edward's University (TX)**



Dr. Martin is a member of the TIAA Hispanic Advisory Council and The New American Colleges and Universities board. He chaired the board of the Council of Independent Colleges, the Independent Colleges and Universities of Texas, the Texas Campus Compact, and the Heartland Athletic Conference. He has served on the boards of numerous councils, coalitions and institutes. Dr. Martin also chaired the Reauthorization Task Force on Student Financial Aid for the National Association of Independent Colleges and Universities, and was a member of the American Council of Education Commissions on Higher Education Attainment and Effective Leadership. He has over 45 years of experience in higher education and has written, lectured, and consulted about the challenges confronting higher education in the 21st century, strategic planning, enrollment management, marketing strategies, geodemographics, and American politics and government. He received a BA in Political Science from St. John's University, and his MA and PhD from Fordham University.

**Félix V. Matos Rodríguez, PhD**  
**President**  
**Queens College of the City University of New York (NY)**



Félix V. Matos Rodríguez became the tenth president of Queens College of the City University of New York in 2014. He is a scholar, teacher, administrator, and former cabinet secretary of the Department of Family Services for the Commonwealth of Puerto Rico. Matos Rodríguez's expert commentary has appeared in many periodicals, including *New York Times*, *Boston Globe*, *Chronicle of Higher Education*, *Hartford Courant*, and *Chicago Tribune*. A member of the Council on Foreign Relations, Matos Rodríguez is also an Aspen Institute Ascend Fellow. He serves on the boards of the Hispanic Association of Colleges and Universities, Phipps Houses, the United Way of New York City, and the Research Alliance for New York City Schools. Matos Rodríguez's work has appeared in peer-reviewed journals including the *Journal of Urban History*, *Latin American Research Review*, *Centro Journal* and *Revista de Ciencias Sociales*. He was the founding editor of the series *New Directions in Puerto Rican Studies* for the University Press of Florida. A *cum laude* graduate in Latin American Studies from Yale University, Matos Rodríguez received his PhD in history from Columbia University.

**Shari G. McMahan, PhD**  
**Provost and Vice President for Academic Affairs**  
**California State University, San Bernardino (CA)**



Dr. McMahan manages a wide and impressive portfolio including Enrollment Services, Academic Operations and Finance, Institutional Research and Analytical Studies, Faculty Affairs and Records, Faculty Development Center, Online Education and Training, and the Center for Excellence in Supplemental Instruction. Since joining CSU Fullerton in 2000, as Associate Professor in the Department of Health Science, Dr. McMahan has served in myriad CSU leadership roles including Interim AVP for Research, Creative Activities and Technology Transfer, Dean of the College of Health and Human Development, as well as Professor and Chair, Department of Health Science. She holds an academic appointment as a full professor in the College of Natural Sciences, Department of Health Science and Human Ecology. She earned her PhD from the University of California, Irvine in Social Ecology, an MS in Health Science from CSU Northridge, and BA degree from Irvine in Social Ecology. Dr. McMahan is the first female Provost in CSUSB history.

**Gail O. Mellow, PhD**  
**President**  
**LaGuardia Community College (NY)**



Gail O. Mellow has served as President of LaGuardia Community College in Long Island City, Queens since 2000. With over 30 years of experience in the field, Dr. Mellow is frequently sought as a commentator on the changing landscape of higher education, strategies for improving the nation's graduation rate and the role community colleges play in strengthening America's economy. Dr. Mellow co-authored *Minding the Dream: The Process and Practice of the American Community College* and *Taking College Teaching Seriously: Pedagogy Matters!*, which explores a groundbreaking digital model for improving faculty teaching to increase student success. In 2015, Dr. Mellow was appointed by Mayor Bill de Blasio to the New York City Economic Development Council, and by the White House to the College Promise Advisory Board, where she has been leading efforts to mobilize students, alumni, faculty and business and community leaders to support state and national efforts to make two years of community college tuition-free. Dr. Mellow received an AA from Jamestown Community College, a BA from SUNY Albany, and her MA and PhD in Social Psychology from George Washington University.

**Diana Natalicio, PhD**  
**President**  
**The University of Texas at El Paso (TX)**



Diana Natalicio was named president of UTEP in 1988. Her sustained commitment to provide all residents of the Paso del Norte region access to outstanding higher education has helped make UTEP a national success story. Dr. Natalicio has served on numerous boards including The Holdsworth Center, Hispanic Scholarship Fund, ACT, the Rockefeller Foundation, and Trinity Industries. She was appointed by President George H.W. Bush to membership on the Advisory Commission on Educational Excellence for Hispanic Americans and by President Bill Clinton to the National Science Board, where she served two six-year terms, including three two-year terms as NSB vice-chair. In 2017, Dr. Natalicio was named one of *Fortune* Magazine's Top 50 World Leaders, and she was included on the 2016 TIME 100 list of most influential people in the world. In 2011, the President of Mexico presented her the *Orden Mexicana del Aguila Azteca*, the highest recognition bestowed on foreign nationals. A graduate of St. Louis University, Dr. Natalicio earned an MA in Portuguese and a PhD in linguistics from The University of Texas at Austin.

**Eduardo J. Padrón, PhD**  
**President**  
**Miami Dade College (FL)**



Since 1995, Eduardo Padrón has served as President of Miami Dade College (MDC), the largest institution of higher education in America with more than 165,000 students. In 2016, President Barack Obama awarded him the Presidential Medal of Freedom, the highest civilian honor in the US, for being a prominent national voice for access and inclusion in higher education. In 2009, TIME magazine included him on the list of “The 10 Best College Presidents.” Dr. Padrón’s pace-setting work at Miami Dade College has been hailed as a model of innovation in higher education. He is credited with engineering a culture of success that has produced impressive results in student access, retention, graduation and overall achievement. He is nationally respected for his advocacy on behalf of underserved populations in higher education, and his in-depth research report, *A Deficit of Understanding*, which highlights the funding crisis that threatens access for low-income and minority students. Dr. Padrón is a prolific writer and has served on the editorial boards of *The Presidency*, *University Business*, and *Campus Technology*. An economist by training, Dr. Padrón earned his PhD from the University of Florida.

**Bart Patterson, JD  
President  
Nevada State College (NV)**



Bart Patterson was appointed President of Nevada State College in 2012 after serving as interim president for six months. Through his years of service at Nevada System of Higher Education (NSHE), Bart is familiar with the mission of Nevada State College. In his role, he has established two top priorities. The first is to improve retention and graduation rates -- which is a top priority system-wide. The second is to look at innovative ways to build NSC while dealing with limited state funding. Esquire Patterson was awarded the Las Vegas Latin Chamber of Commerce, Chairman's Award of Excellence for Community Leadership & Higher Education. He is currently a member of the American Association of State Colleges and Universities Council of State Representatives and the American Association of State Colleges and Universities Grant Resource Center. A graduate of Utah State University, Esquire Patterson earned his JD from Duke University School of Law.

**José R. Rodríguez-Medina, PhD**  
**Research and Innovation Office Director**  
**University of Puerto Rico (PR)**



Dr. José R. Rodríguez-Medina is Professor and Chair of the Department of Biochemistry and Nutrition at the School of Medicine of the University of Puerto Rico Medical Sciences Campus. Dr. Rodríguez-Medina earned his bachelor's and master's degrees in Biology from the University of Puerto Rico Rio Piedras Campus. After obtaining his doctoral degree in Biology from Brandeis University, he conducted post-doctoral training in biochemistry at the National Cancer Institute in NIH. He joined the School of Medicine at the University of Puerto Rico Medical Sciences Campus in 1989. His research studies have focused on evaluating myosin type II function in *Saccharomyces cerevisiae*, regulation cell wall stress response, signaling pathways in cytokinesis, cell wall biogenesis, and growth. Dr. Rodríguez-Medina is a member of the Steering Committee of the University of Puerto Rico INBRE Program and co-coordinates a Science and Technology Competency Enhancement Core funded by this award. He also co-coordinates the RCMI Molecular Biology Core Facility at the UPR Medical Sciences Campus, and is key function leader of the Puerto Rico Clinical and Translational Research Consortium core laboratories, funded by NCCR.

**Mark B. Rosenberg, PhD**  
**President**  
**Florida International University (FIU)**



Mark Rosenberg is president of Florida International University (FIU). A public institution of higher education, FIU is the face of the country's future in higher education demographics: it is a majority-minority institution that leads the country in the production of minority degrees in the sciences and engineering. A political scientist specializing in Latin America, Dr. Rosenberg is the first FIU faculty member to ascend to the university's presidency. Under his leadership as president, FIU has increased enrollment to almost 56,000 students, improved graduation rates by nearly 13% and hired over 500 new faculty. Dr. Rosenberg earned a BA in 1971 from Miami University of Ohio and a PhD in Political Science with a graduate certificate in Latin American and Caribbean Studies from the University of Pittsburgh in 1976. He has written or co-edited seven books and numerous scholarly articles in leading journals. His latest book, *The United States and Central America: Geopolitical Realities and Regional Fragility* (2007), is a Harvard University project co-authored with Luis Guillermo Solis of Costa Rica. Governmental and media organizations have frequently sought Dr. Rosenberg's expertise on Latin America. He is a member of the Council on Foreign Relations, has testified before Congress numerous times, and has served as a consultant to the Department of State and the US Agency for International Development.