



Factors that supported Hispanic doctoral students on their path to a doctorate in STEM

Dr. Dawn M. Horton

University of Massachusetts, Amherst
dmhorton@umass.edu

Irma Torres-Catanach

University of Texas at El Paso
iytorrescatanach@utep.edu

Introduction

City College of New York (CCNY) and the University of Texas at El Paso (UTEP) were awarded an NSF grant, the Hispanic Alliance for Graduate Education and the Professoriate (H-AGEP) with the goal of increasing the number of Hispanic STEM doctoral students who teach at the community college level. The grant interventions include teaching skills and experience, mentorship, and professional development to prepare students for this career. These interventions are designed to encourage Fellows to teach and become role models for Hispanic undergraduates in community colleges.

Potential Impact of having Minority Faculty

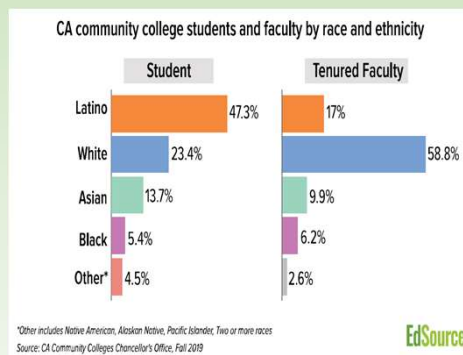
Research results suggest that community college minority students having a minority-member faculty showed a number of positive outcomes such as better grades, reduced dropping of classes, a greater likelihood of passing a class, and a greater likelihood of earning a B.

Gaps on these measures were reduced by 20-50 percent and lead to longer-term positive outcomes such as retention and graduation (Fairlie, Hoffman, Oreopoulos, 2011) suggesting the crucial importance of increasing the number of minority faculty.

Inadequate Representation of Hispanic faculty at Community Colleges

Despite the importance of having minority faculty, Hispanic students find a severe under-representation of Hispanic faculty at community colleges.

In California community colleges the minority discrepancy is significantly more extreme for Hispanic students than all other racial/ethnic groups combined.



Peele, Willis, 2021

Further, only 4% of tenure or tenure-track faculty are Latina (Nuñez & Murakami-Ramalho, 2012).

STEM representation

Rates of Hispanic faculty are even lower when discipline is considered, with STEM disciplines showing the lowest rates of minority faculty (Li & Koedel, 2017).

Research

The research component of this grant focused on understanding more about the career-decision making of Hispanic STEM doctoral students.

Research Questions

1. How did Fellows develop their interest in STEM?
2. How did Fellows come to be in STEM Ph.D. programs?
3. What are Fellows current thoughts about teaching at the community college level?

Method

H-AGEP Fellows who had completed their teaching training (a semester-long course on introduction to teaching) and their community college placements (paired work with an experienced community college instructor and an opportunity to teach) were recruited for in-depth interviews with one of the two research team members.

Interviews were recorded, transcribed, and then inputted into MAXQDA 2020. The researchers used grounded theory development of codes and reiterative review to compare codes to ensure consistency. Inter-coder reliability was computed. After the transcripts were coded, themes were developed.

Sample

All 13 H-AGEP Fellows who met the criteria agreed to participate. Six Fellows were from CCNY and seven Fellows were from UTEP.

Ethnicity	#	University
Columbian	2	CCNY
Ecuadorian	1	CCNY
Mexican	7	UTEP
Peruvian	1	CCNY
Puerto Rican	2	CCNY

Results

Q1: Interest development:

Family, personal interests, experiences

Q2: In to STEM Ph.D.:

Chance events, employment issues, professors, coursework

Q3: Teaching interests:

Career interest	Number of Fellows
Teach at community college	3
Teach at community college or 4 yr. college/univ.	3
Teach at 4 yr. college/university	1
Work in private sector to gain skills and then return to teaching	3
Industry/private sector	2
Uncertain	1

Initial Career Decision Making Model Elements

Critical Incidents

Chance Events

Social Justice Imperative

Conclusions

Consideration needs to be given to how the happenstance events that propelled many of our Fellows into STEM doctorates can be created for all interested Hispanic undergraduates so that these are reoccurring non-chance events rather than limited opportunities.

References

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