
A “Chilly Climate” for Underrepresented Minority Students and Professionals in STEM

Findings from Two Studies:
The NEAGEP Summative Evaluation &
Beyond the Double Bind

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Presentation Outline

- ❑ New England AGEP (NEAGEP) Summative Evaluation Project Overview
- ❑ NEAGEP Evaluation Findings
- ❑ Beyond the Double Bind Project Overview
- ❑ Beyond the Double Bind Case Study: Talia
- ❑ Recommendations

NEAGEP Summative Evaluation

(NSF-HRD 1111219; PI James Staros and PD Sandra Petersen)

RESEARCH QUESTION

How, and to what extent, has NEAGEP met the goals of the AGEP program: to recruit retain URM students in STEM, and to place them in STEM positions at American universities and colleges?

DATA

- One-year evaluation from 2012-2013 across 10 institutions
 - Focus group interviews with 31 URM graduate students at 4 institutions
 - 234 graduate students surveyed
 - Individual interviews with 10 alumni
 - 88 alumni surveyed
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NEAGEP Evaluation: Findings Overview

- Reasons NEAGEP grad students WOULD consider careers in the professoriate (51.2%; n=109/213)
 - ❑ Become a role model for future generations of minority students; other impacts on society
 - ❑ Opportunities to do exciting research
 - ❑ Teaching and administrative experience in graduate school has helped them prepare for academia
 - ❑ Encouraged by faculty at graduate institution
 - ❑ Supportive graduate student groups
 - ❑ Attendance at the Compact for Faculty Diversity Institute on Teaching and Mentoring

Becoming a Role Model

I definitely want to give back and make an impact, not only in my field, but to other students, especially people who look like me – young females from the inner city... But in the meantime, I may still do a post-doc, maybe get some more government experience because I think the most effective teacher or professor would be the one who could bring all those experiences to the classroom and that can reach out. And so by having [the AGEP/Diversity Office] here and because they know the process, I think that that also helps me to know the process and to be able to share that with someone else when I become a professor.

Kara

Attending the Compact for Faculty Diversity

Actually, when I first started graduate school, I wanted to have a career in industry and by the time I finished I was more interested in academia and possibly having my own research lab... I like the interaction of mentoring and having students and kind of assisting them in some of their career goals or helping them to be exposed to other careers. And also attending the Compact, which was for faculty diversity – they are trying to encourage more minority graduate students to pursue careers in academia so that you could be an example and basically by example for other minority undergraduate students.

Denise

NEAGEP' s Support Mechanisms

- **Receiving an NEAGEP fellowship** was significantly associated with a 65 percent increase in the probability of a student pursuing a career in academia.

	Coefficient	Std. Error	p-value	Odds	Probability
Received financial support from NEAGEP while attending your graduate program (n=213)	0.624*	0.282	0.027	1.866	0.651
Intercept	-0.209	0.18	0.246	----	----

*p<.05 **p<.01

Note: All tables presented in the NEAGEP report describe the correlational relationships between participation in particular NEAGEP program components and student pursuit of academia. Data presented are not meant to be interpreted in a causal manner.

NEAGEP' s Support Mechanisms

- **Receiving NEAGEP financial assistance to attend conferences** was significantly associated with a 65 percent increase the probability of pursuing an academic career.

	Coefficient	Std. Error	p-value	Odds	Probability
NEAGEP program provided financial assistance to attend conferences (n=213)	0.632*	0.278	0.023	1.882	0.653
Intercept	-0.251	0.190	0.187	----	----

*p<.05 **p<.01

Note: All tables presented in the NEAGEP report describe the correlational relationships between participation in particular NEAGEP program components and student pursuit of academia. Data presented are not meant to be interpreted in a causal manner.

NEAGEP' s Support Mechanisms

- **Participation in NEAGEP social activities** was significantly associated with a 67 percent increase in the probability of pursuing an academic profession.

	Coefficient	Std. Error	p-value	Odds	Probability
Participated in NEAGEP social activities (<i>n</i> = 213)	0.699*	0.279	0.012	2.012	0.668
Intercept	-0.316	0.201	0.115	----	----

* $p < .05$ ** $p < .01$

Note: All tables presented in the NEAGEP report describe the correlational relationships between participation in particular NEAGEP program components and student pursuit of academia. Data presented are not meant to be interpreted in a causal manner.

NEAGEP's Support Mechanisms

- **Participation in NEAGEP professional development events** was significantly associated with a 72 percent increase in the probability of pursuing an academic career.
- **Participation in NEAGEP networking events** was significantly associated with a 76 percent increase in the probability of pursuing an academic career.

	Coefficient	Std. Error	p-value	Odds	Probability
Participation in NEAGEP professional development programs/career seminars (n=131)	0.962*	0.375	0.010	2.618	0.724
Intercept	-0.477	0.300	0.112	----	----
	Coefficient	Std. Error	p-value	Odds	Probability
Participation in NEAGEP networking events (n=154)	1.133**	0.36	0.002	3.106	0.756
Intercept	-0.663	0.299	0.026	----	----

* p<.05 **p<.01

NEAGEP' s Support Mechanisms

- **Speaking to an NEAGEP official** at some point in the graduate program about pursuing academia was significantly associated with a 78 percent increase in the probability of pursuing an academic career.

	Coefficient	Std. Error	p-value	Odds	Probability
Discussed the possibility of pursuing an academic career with a NEAGEP official (n=213)	1.288**	0.369	0.000	3.626	0.784
Intercept	-0.218	0.156	0.163	----	----

*p<.05 **p<.01

Note: All tables presented in the NEAGEP report describe the correlational relationships between participation in particular NEAGEP program components and student pursuit of academia. Data presented are not meant to be interpreted in a causal manner.

NEAGEP Evaluation: Findings Overview

- Reasons AGEP grad students would NOT consider the professoriate (48.8%; n=104/213)
 - Non-institutional factors
 - Greater financial prospects in industry
 - Institutional factors
 - A lack of diverse faculty
 - A lack of cultural competency among faculty
 - Diversity is perceived as not valued at the institution or in academia
 - A lack of structured support for AGEP/minority groups
 - Perceived competition in academia
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Financial Considerations

I'm almost certainly going to go into industry. I think the money was a big factor for me. I think if academia paid better, I'd just stay in academia, but it doesn't. I do like doing research; I love teaching... Teaching is not really the priority for the university for you, especially seeing so many great professors not get tenure because their research wasn't good enough. So I loved teaching and I like doing research, but I think I just made the decision to go to industry, I think just financial stuff was a big thing.

Faye

Lack of Diverse Faculty in STEM

I think there's a lack of diverse faculty, so in the time that I've been here, I think I've only had one African-American professor and maybe two professors that were either Hispanic or Latino or Latina. And so that to me – it's important for me as a student for me to be successful to self-identify with somebody who's passing down knowledge to me and to see more faculty members that are from other diverse groups.

Cesar

A Lack of Cultural Competency Among Faculty

We needed to get at least an A-minus in the course to qualify [for the PhD qualifying exam]. So I went to speak to [the professor] about that and he just said he was a little worried since my average was currently an 89.4 and I need at least a 93 to qualify. And then he was just like, “The worst case scenario, if this doesn’t work out, you just take your Masters ‘cause you’re colored and a lot of schools would just love to have you.” And I literally just paused cause I was just like... Okay. And I went home that afternoon and I was speaking to a friend of mine and I come to find out that a group of these students in AGEP have encountered issues like this...

Yolanda

A Lack of Cultural Competency Among Faculty

I did fairly well in the final exam – I have no idea how – but it does take a toll... I've doubted myself in a lot of ways and I guess I'm not as excited to tell people about [this school] or to come here. So recently I've been thinking about should I stay on for my PhD; continue my PhD or should I leave with the Masters and just get a job. So I guess it's put me kind of in a state of confusion as far as if I am competent enough academically to become an academic faculty or should I just leave with a Masters.

Yolanda

Perception that Diversity is Not Valued

A barrier that I had was because there wasn't a celebration of diversity, I had to hide what I was doing. So that means that instead of being able to go to my advisor and being like "I'm doing this great work with NEAGEP and we are increasing minority students." I could never say that; I can only say what I'm doing in the lab or what I'm doing in the field because if I talked about what I was doing with NEAGEP or anything of that nature, then their question was, "Well, why aren't you doing work in the lab? That's the time you should be working on my articles. That's the time you should be working on my presentations. That's the time you should be working on my posters."

Allen

A Lack of Structured Support for AGEP/URMs

At [our school] there's really not a lot of support for minority students... But actually meeting with the Graduate Dean and just seeing how little of a priority it was for him, "Oh, we're not going to have [AGEP] housed here," it was almost like they don't really care about it that much: "It's not our priority. I mean, even the smallest things they weren't able to give us support. We were going to a number of minority conferences and we're like, "Do you even have a nice banner for [our school]?" They're like, "Oh no, we don't think we do."

Faye

Perceived Competition in Academia

We've all also experienced professors who are new in the field, or some other professor that we know who's having a tough time, and see how difficult it is to get grants. When you look up to somebody and you know they're brilliant and you see them struggling, it deters you from even wanting to try. Cyrus

Nowadays it's so competitive... You see the professors that they bring for interviews and you see their CVs... You know that you're not ready to apply [for a position] to any school because you're not at that level. Kai

Beyond the Double Bind Overview

(NSF-DRL 0909762; PIs: Maria (Mia) Ong & Apriel Hodari)

RESEARCH QUESTION

What strategies enable women of color to achieve higher levels of advancement in STEM education and professions?

DATA

- 80 women
 - 31 interviews
 - 194 extant texts
- Astronomy, Astrophysics, Physics, Engineering, Computer Science

BDB Case Study



Talia

African American

Associate Professor, Engineering

- Isolation
 - Only female & person of color at her institution
- (Racialized) doubts about her work ethic
- The need to work harder to receive recognition
- Lack of support in having a family

Questioning Work Ethic

If [the Department Chair] came by your office and didn't see you in there, he would accuse you of not having been to work that day. Now, normally I work with my office door closed... or in the library or something. But it got to the point where I would have to put Post-it notes of my door saying "back in ten minutes" when I went to the bathroom.

[The Chair said,] "Let me just ask you this. How hard do you work?" Yes, this was the question I was asked. This was the question of the woman who had log books. Not only did I put the Post-it note on my door to say, "I'm going to the bathroom", but I started keeping log books from what time I arrived, who I saw in the parking lot, what I did...

Questioning Work Ethic

I said, “But let me examine that question you just asked me... I said, “I hope you’ll take this in the spirit in which it’s given, which is just a matter of being blunt.” I said, “As I’m sure you realize, there’s often times a feeling, or a sentiment, or even a belief on the part of others that African Americans don’t work very hard. Or, frankly, are lazy.”

And I said, “And if that is something that is anywhere in my case, in my paperwork, we need to address that right now. Because I see that as being part of that stereotype, and I am incredibly insulted that that would even be applied to me in any way, shape, or form.”

Work-Life Balance: Maternity Policy

First I had to go and find out all of this information [about maternity leave], because of course nobody in my department knew. Dean's office had no clue. And I wouldn't even have trusted what they did know. So I basically went to the Provost's office, got all the information, went to my Chair and explained that I was having a baby, here's the policy, and that's it.

Lack of Recognition

I have often said that, frankly if I were a White male, for the work that I've done, the things I've accomplished and what not, I'd be an endowed chair professor by now. Now, I'm not saying that in any sort of way to brag, it's just the way I've operated. I know that I, as far as rank and all that would go, would be-- by the academic standards further along. So it's been a long path, and it's still going, but we'll see.

Institutional Recommendations

- 1) Institutionalize diversity efforts and make it a priority at the institutional level.

Recruit more minority students and more tenure-track minority faculty to provide role models, mentors, and advisors to URM students.
 - 2) Develop strong training programs to cultivate cultural sensitivity among faculty
 - 3) Construct an official mentorship program for graduate URM (AGEP) students.
 - 4) Institutionalize and enforce policies to eradicate racial bias and allow faculty to create a balance between work and life.
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Recommendations to AGEP Programs

- Offer AGEP fellowships, if possible, to recruit students into graduate programs and to retain them.
- Encourage and financially support URM students to attend conferences that support their interest in academia.
- Offer social and networking events on a consistent basis so that new and advanced URM graduate students can meet one another and others in the field.
- Offer AGEP professional development workshops on a monthly basis.
- Develop formal and informal mentoring relationships between AGEP staff and students.

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