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# DIVERSITY STALLED

Explorations into the Stagnant Numbers of African American Engineering Faculty

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## INTRODUCTION

A diverse engineering university faculty and workforce are necessary to achieve and maintain a country that is prosperous, secure, and attentive to the technological and social well-being of all individuals. Thus, this research study investigates one of the challenges to a diverse engineering faculty and workforce by exploring the causes behind why African Americans remain one of the most underrepresented racial groups in engineering faculty positions, remaining steady at 2.5% for the past five years, despite intervention programs that aim to broaden the participation of minorities in engineering at various points along the pipeline.

This three-year study explores the barriers and opportunities facing a cohort of:

1

African American engineering and computing PhD students, candidates, and postdocs pursuing engineering faculty careers

2

African American engineering tenure-track and tenured faculty

3

Minority/Diversity Engineering Program Directors

4

Engineering and Computing Administrators (including Deans of Engineering, Assistant Deans of Faculty Development, and Diversity)

This study examines factors that impact the production of African American PhDs in engineering, as well as those factors that affect the pathway to tenured faculty positions in engineering by assessing the current engineering faculty climate through surveying and interviewing African Americans in engineering, from PhD students and postdoctoral scholars through full professors. This study further analyzes the engineering climate through a national survey for Black PhD engineering students. The analytical framework of this study is guided by the literature on racial and gender frameworks and Social Cognitive Career Theory.

The intellectual merit of this work should lead to:

1

A Better Understanding of the career trajectories for African American PhDs in engineering

2

The Technical, Societal, & Cultural influences that impact their doctoral education, career decision-making, and experiences in academia.

Although this study focuses on African American faculty, increased faculty diversity creates a more effective learning environment. Schools with greater racial diversity tend to have better retention, satisfaction, and intellectual development. The broader impact of this study has the potential to change the model of how engineering candidates of color are mentored and primed for engineering faculty positions.

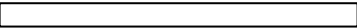






**PhD Candidates/Postdoctoral Students**

**Date:** \_\_\_\_\_  
**Time:** \_\_\_\_\_  
**Institution:** \_\_\_\_\_  
**Facilitator:** \_\_\_\_\_

**SEATING LAYOUT DIAGRAM**

**Sketch of seating layout:**

**Key/legend:**

Board/Screen:  Window:   
Desk/table:  Podium:   
Video camera:  Audio recorder:  Paddle mic: 

**ATTENDEE INFORMATION**

Total number of participants in the room: \_\_\_\_\_  
\_\_\_\_\_ male (M) \_\_\_\_\_ female (M)

Observed race/ethnicity:

\_\_\_\_\_ Black/African American (AA) \_\_\_\_\_ Native American (NA)  
\_\_\_\_\_ Latino/Hispanic (LH) \_\_\_\_\_ White/Caucasian (WC)  
\_\_\_\_\_ Asian/Pacific Islander (API) \_\_\_\_\_ Other (O)

**Before you begin:**

#1 Attendees sign consent form.

#2 Attendees sign reimbursement form.

#3 Ask for feedback on the PhD survey and note comments below:

**Tell the participants:**

“Before we begin the interview, I want to remind you that participating in this study is voluntary and your responses are completely confidential. At any point during the interview, if you would like me to turn off the recorder, just tell me to do so. You can leave at any time as well. Do you have any questions about the study before we begin?”

**Turn the recorder and/or video on, and say:**

“This is (INSTITUTION NAME).

Today is (DAY and DATE).

It is (TIME).

I, (INTERVIEWER’S NAME) am facilitating this interview.

## **Questions for participants**

### **Introductions**

1. Please go around the table and state a) your name; b) your major/concentration; and c) your year in the PhD program.

### **Educational Background**

1. What motivated you to pursue a PhD? Why did you choose this school/program?
2. What experiences in your undergraduate and/or masters' programs influenced your decision to pursue a PhD.... To come to this program?

### **Mentoring**

1. Does your department perform formal or informal mentoring? Do you have mentors in your field? How have these mentors influenced your academic and career decision-making?
2. Do you have any minority graduate programming on your campus? How do you capitalize on opportunities offered by these programs and similar organizations? How so?
3. Do you have role models in your research field?

### **Race and Gender**

1. If you were a man/woman do you think your engineering experiences would be different and if so how?
2. Do you have to do certain things within your engineering education to prove your intellectual abilities to others?
3. Do you think you have questioned or doubted about your abilities in your research field because of your race?
4. Do you think you have the same opportunities to succeed as students of other races/ethnicities?

### **Institutional Support and Climate**

3. In what ways do you feel attending a predominately White institution/Historically Black institution has impacted your PhD experiences?
4. How often do you collaborate with your fellow graduate students in your lab? What research do you perform in the lab? What type of collaboration do you engage in with your colleagues in terms of your research contribution?
5. How do you maintain your productivity and work-life balance?

### **Resilience**

1. Where were there any instances that you were discouraged to the point that you contemplated dropping out of the PhD engineering program? What were the circumstances and why did you decide to persist?

### **Future Research Trajectory**

1. What are your career goals after the PhD/Postdoctoral occupancy?
2. For PhDs: Are you considering a post-doc or something similar after completing the PhD program? Why or why not?
3. What do you feel will be the biggest challenge you expect to face after graduation/after the postdoctoral experience?
4. What is attractive, if anything, about a tenure track position in engineering?

### **Our Study**

1. We have observed that the percent of Black engineering faculty has been stagnant for over 10 years at 2.5%. What do you attribute the cause of this stagnation?

### **For those who will be pursuing faculty positions**

1. In what ways has your institution provided opportunities for professional development to pursue faculty position? (Mock Job Talks, Introductions to Colleagues, Professional Conferences, Travel awards, none, grant writing, info on academic job search, Other etc.)
2. What institutions will you be considering for submitting a job application.
3. What challenges are you faced in the pursuit of obtaining a faculty position?
4. What types or support will you need in order to the process easier?

### **Feedback on this interview experience**

1. Is there anything you would like to tell me about your academic and life experience that I have not asked? (Opportunity for the participants' to critique the questions or add any questions they feel are relevant to the conversation)