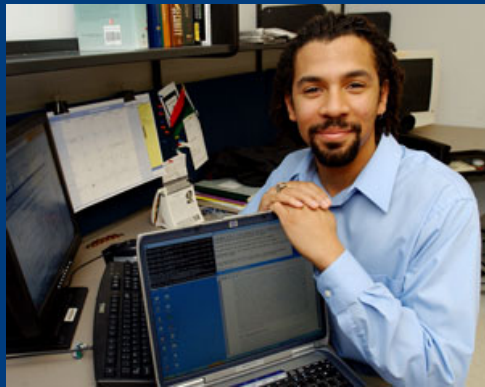


DOES A PROFESSOR'S RACE MATTER WHEN MENTORING AFRICAN AMERICAN ENGINEERS AND COMPUTER SCIENTISTS?



Christopher B. Newman, Ph.D.
University of San Diego

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PROBLEM

- 2% of faculty members in engineering at research universities are African American (Slaughter, 2009)
- Importance of same race faculty role models (Slaughter, 2009; Leggon, 2010)
- Seeming contradiction for success

LITERATURE REVIEW

- **Benefits of faculty interactions** (Astin, 1993; Kuh & Hu, 2001; Pascarella & Terenzini)
- **Importance of same race faculty role models in Engineering** (Slaughter, 2009; Leggon, 2010)
- **Strain on faculty of color** (Allen et al., 2002; Villalpondo & Delgado Bernal, 2002)

METHODS

- Case Study Design (Yin, 2009)
 - Two Predominantly White Public Research Universities
 - Baldwin University (Midwest)
 - Porter State University (Southeast)
 - Characterized as Top 50 producers of Baccalaureate degrees in Engineering among African American

Pseudonyms are used for the institutions and all participants

METHODS (CONTINUED)

- Semi-Structured Interviews (30-75 minutes) (Merriam, 1998; Maxwell, 2005)
 - Undergraduate Students (n= 37)
 - Porter State – mean GPA 3.27
 - Baldwin – mean GPA 3.4
 - Faculty (n= 9)
 - Administrators (n= 16)
 - Recent Alums (no more than 5 years) (n= 8)
- Professionally transcribed
- Coded using HyperRESEARCH

LIMITATIONS

- Focus on successful students and cannot make any conclusions about unsuccessful students
- Students were primarily recruited through respective campus' minority engineering programs (MEP)
- Variation in participation by campus

FINDINGS

- Importance of African American Faculty Members
- Positive Interactions with Faculty from a Different Racial Background
- Negative Interactions with Faculty from a Different Racial Background

FINDINGS

- Importance of African American Faculty Members

“I’ve only ever had one minority professor and he is from like India. As an African American student it’s somewhat not discouraging, but it’s kind of like, man, we have all these Caucasian professors, and I mean no one to relate to us, no one that I can go to and be like you got through it, I can get through it too. Just seeing that face would mean a lot to me.”

--Charlotte, Porter State, Computer Engineering, 3.14 GPA

FINDINGS

- Importance of African American Faculty Members (cont'd)

“[Dr. Eaton] actually, at one of our award ceremonies for grades and things like that, [Dr. Eaton] pulled me aside and was like, “hey what are you planning on for grad school?” That was the first time somebody ever talked to me about that or about me doing grad school, so yeah from then I said yeah ok sure Ill apply and check it out and see how it goes.”

--Eli, Baldwin, Civil Engineering, 3.6 GPA

FINDINGS

- Importance of African American Faculty Members (cont'd)

“As part of my casebook, I pointed out that because of the work I’ve done the enrollment of women has gone from, in our Ph.D. program, 20% to 60%. We will have doubled the URM enrollment in our Ph.D. program. I can go on! When I was the undergraduate program advisor our graduation rate went from 80% to 92%. I can go on! But it’s just kind of like, “ok, and how much money did you bring last year, and how many publications did you write last year?”

--Dr. Eaton, Baldwin, Faculty member

FINDINGS

- Positive Interactions with Faculty from a Different Racial Background

“He just wants everybody to succeed, and he really acts on it. When I first got here he took me out to eat and asked me about my background, my experiences, where I saw myself in the near future and distant future. Then he mentally writes everything down, and is like, “okay, he said he wanted to do this as a freshman, so how close is he to his goal?” Then we’ll just go back and forth he provides undergraduate research. He is just accessible, I have his house number and his mobile number.”

--Ethan, Porter State, Computer Science, 3.28 GPA

FINDINGS

- Positive Interactions with Faculty from a Different Racial Background (cont'd)
 - Diverse perspectives are important and help his research
 - Expand opportunities for racial minorities
 - Support from Porter State School of Engineering

--Dr. Yang, Porter State, faculty member

FINDINGS

- Negative Interactions with Faculty from a Different Racial Background

“I don’t feel like the help from the professors is the same. When I was younger, I thought it probably is because of my race, but I was more I guess more upset about it. But then as I got older and started thinking, I think sometimes they just probably like to help people who are more like themselves, and that’s probably why they help white kids and things like that... [long pause]

FINDINGS

- Negative Interactions with Faculty from a Different Background (cont'd)

...But that was the major thing like going to office hours I didn't feel like I got the same quality of help sometimes from those professors. So I had to seek different avenues to figure out how to understand the work, so it wasn't as easy for me to excel in those classes."

Ian, Porter State, Biomedical Engineer, 3.37

DISCUSSION / IMPLICATIONS

- Does a professor's race matter?
 - YES – Role models “Proof Existence”
 - NO – Faculty of different races may provide meaningful engagement opportunities and support for African American Engineers and Computer Scientists
- Assign faculty mentors to undergraduate engineers and computer scientists
- Reevaluate faculty service rewards in the promotion and tenure review

Thank You

Christopher B. Newman, Ph.D.
Visiting Assistant Professor
cnewman@sandiego.edu



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