

An examination of the numbers: African American Female Faculty in Engineering

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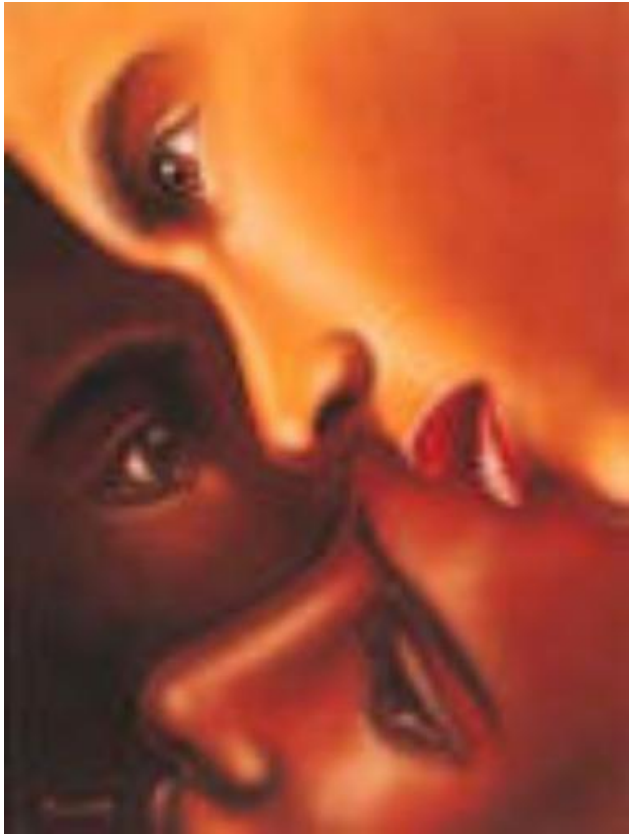
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Introduction

- In 1975, underrepresented women in STEM met at AAAS to discuss common experiences
 - Double oppression of sex and race or ethnicity
 - Third oppression in the chosen career
- In 2011, the conversation had moved from rights versus wrongs to support versus neglect



Introduction



- Little is still known about the collective experiences AA women in academia encounter
- There were two panels held at FIE 06 and KOF 07 to present emerging themes

Motivation



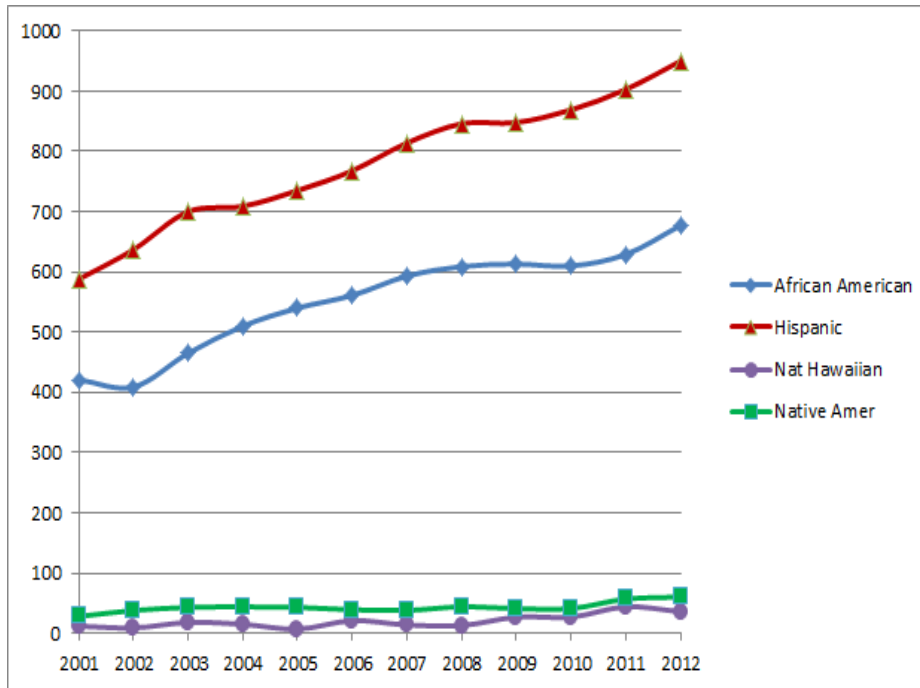
- Explore the national demographics for African American women in engineering education
- What can we learn from data on AA female faculty in engineering programs to develop new initiatives to promote the experiences and provide support for this group?

Methods

- Extracted data from ASEE databases which includes data on engineering faculty at accredited engineering programs, categorized by
 - gender
 - race
 - rank
 - discipline
- Data on AA women is only available between 2001 and 2012

Results:

Trends from 2001 – 2012

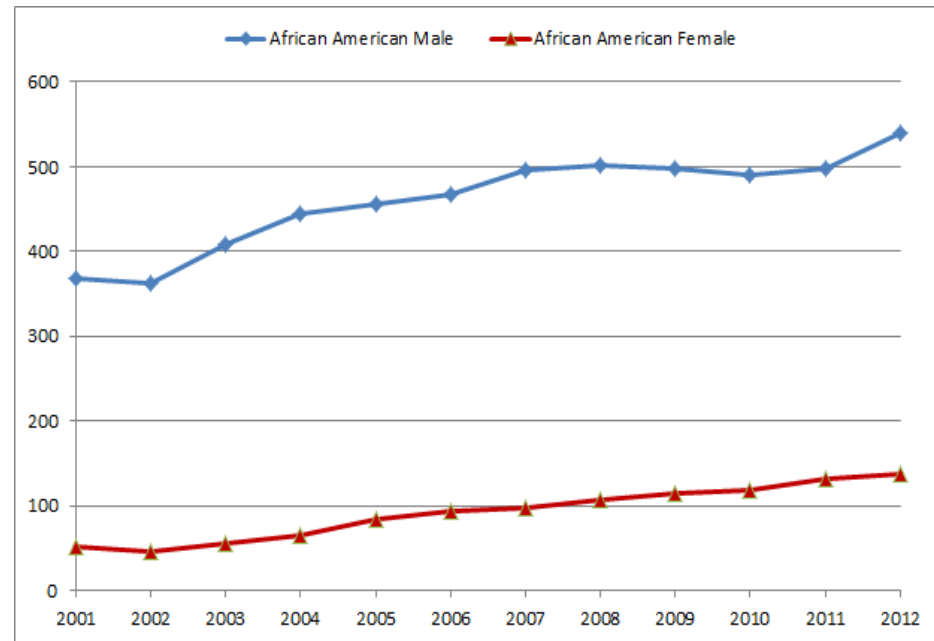


- Approximately 430,000 faculty in accredited US engineering schools in 2012
- 64% are tenure-track
- female engineering faculty increased from 9 to 12%
- Hispanic faculty increased from 3 to 4%
- AA faculty increased from 2 to 3%

Results:

African American Faculty

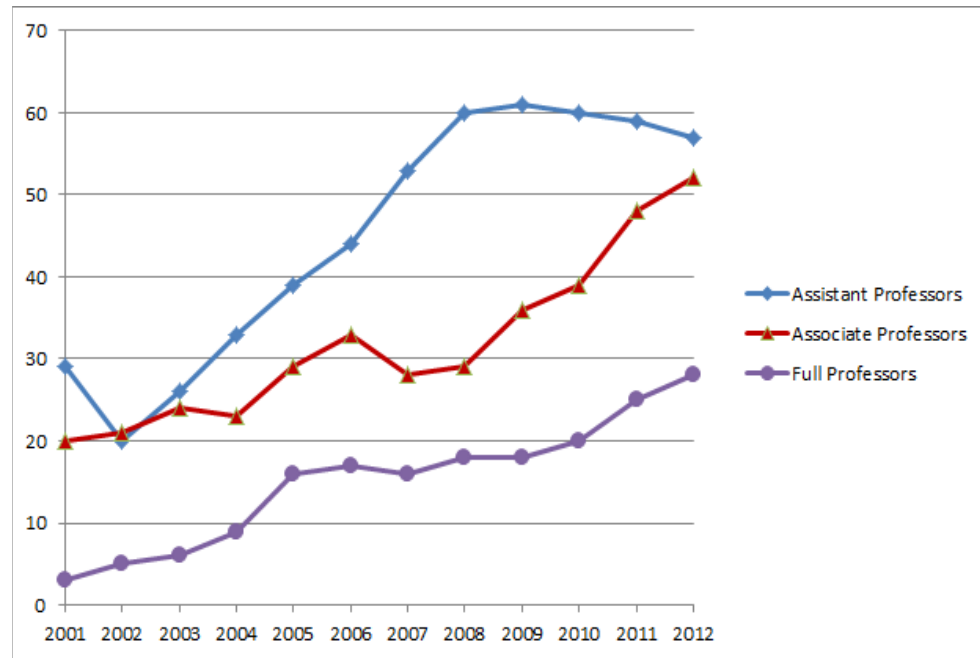
- AA women make up 4% of all women currently in eng professoriate (1% increase since 2001)
- AA women increased from 12 to 20% of all tenure track AA
- This is only a slight increase compared to the population as a whole



Results:

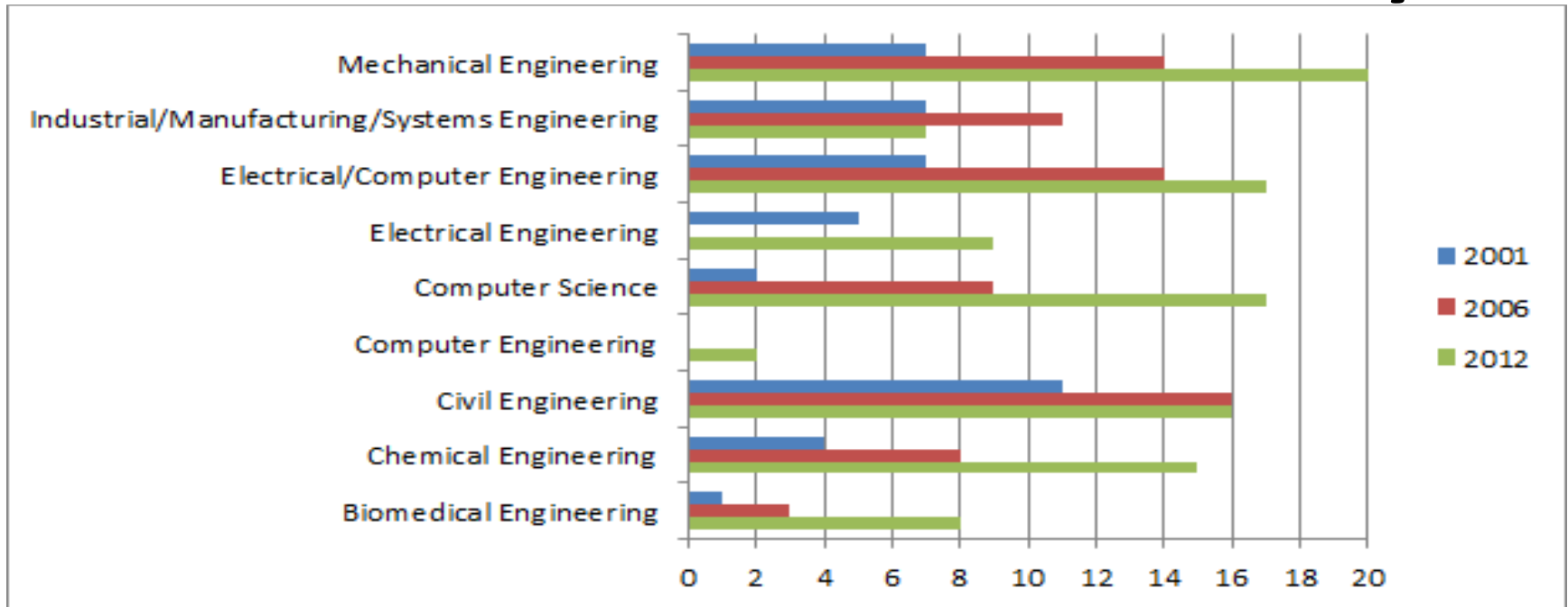
African American Female Faculty

- In 2012, there were less than 30 AA female full professors
- There were strides made at the associate level
- There are only 140 AA female eng faculty across all ranks



Results:

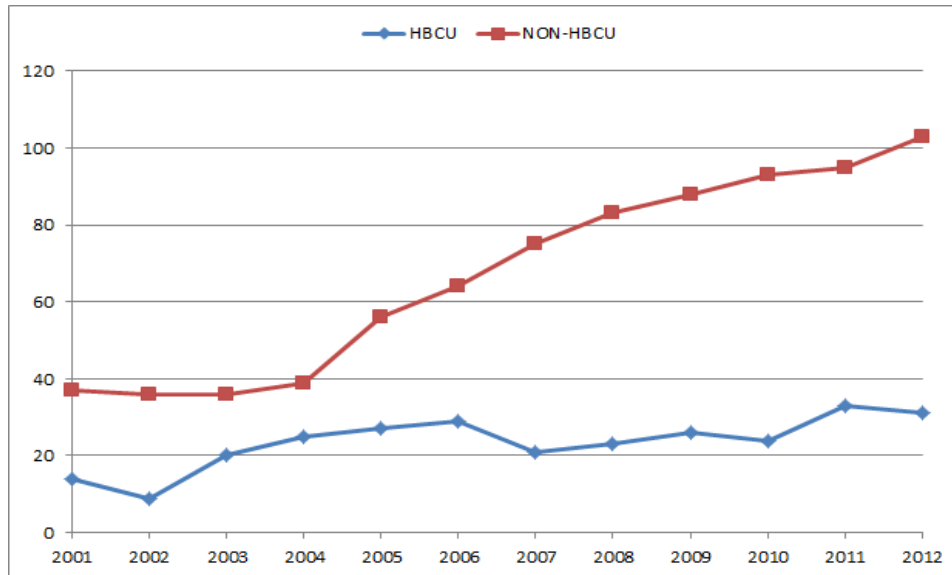
African American Female Faculty



Numbers are still low by discipline despite some growth in mechanical, electrical & computer, chemical engineering and computer science

Results:

AA Female Eng Faculty by Institution Type



- AA Female Eng faculty across all ranks at the 12 HBCUs with eng schools
- There are 295 non-HBCU eng schools
- One-third of the population of AA female eng faculty are at HBCUs
- Promising that the numbers are increasing

Discussion

- Data does not correlate individual longitudinal tracking
- No information about recruitment or retention or effective practices (i.e. HBCUs)
- Only includes data from ABET accredited engineering programs



Discussion

- Data could also be classified by institution type
- Study could be extended to Hispanic and Native American female faculty
- The benefits could be to inform policy makers to connect the best practices in development, recruitment, retention and promotion



Discussion



- Extend this work to empirical studies with qualitative and mixed methods to answer research questions
- Large scale studies across multiple institutions
- Expand theoretical and methodological frameworks on research on WOC in engineering

Conclusions

- Although the numbers have increased over time, there are still fewer than 150 AA women faculty across all ranks employed in tenure-track and tenured positions in accredited engineering programs
- HBCUs house the largest number AA women faculty

Conclusions

- Policymakers, administrators, and faculty must continue to identify ways to increase, recruit, retain and develop African American female faculty in engineering
- This could be done with empirical studies and dissemination about the best practices and longitudinal experiences of women of color in engineering

Questions

