

Storytelling and Utopia as Resistance to Marginalization of African-American Engineers at a PWI

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Chanel Beebe is an Engineering Education Researcher at Purdue University where her work focusing on broadening participation in engineering and engineering thinking. Her passion lies in empowering communities to solve their own problems using creative pedagogies and engagement strategies. Her research looks at using the engineering design process to address social issues in a way that keeps the design process in the hands of communities that face the social problems.

**Storytelling And Utopia As
Resistance To Marginalization
Of African American
Engineers At A PWI**

Chanel Beebe

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WATCH AND REFLECT

<https://www.youtube.com/watch?v=RD2o6soOeII>

How did that make you feel?

What stuck with you?

What did you see?

Key points

Education should prioritize active learning and embodied knowledge

Educational opportunities are different for different groups of people

Marginalization exists

AGENDA

- My Story
- Background of Project
- Phase 1 and Phase 2
- Phase 3
- Summary of Findings
- Recommendations
- Takeaways



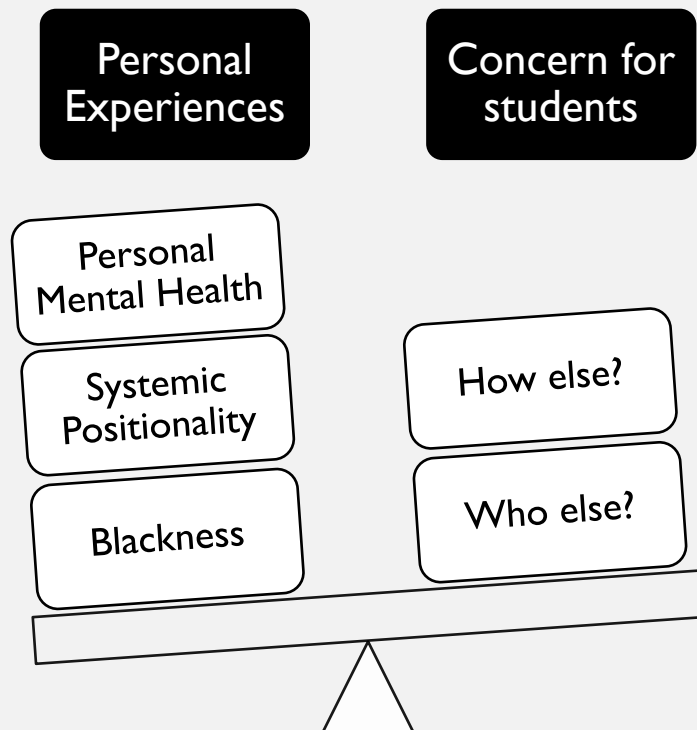
PROJECT BACKGROUND: MY STORY

- Undergrad: University of Michigan: Industrial Engineering
 - Sociology Classes
 - #BBUM Being Black at Michigan
- 8 months teaching in Detroit Public Schools
- Heavy involvement in Purdue Black Cultural Center
 - Research Tours
 - Relationships with Undergraduates
- Solidarity with Mizzou and Black Lives Matter
- Personal Research: Social Equity and Design

Underrepresentation as Trauma

PROJECT BACKGROUND

- Purpose: rich collection of **African American students' experiences** as related to the culture of engineering at a Predominantly White, Large Midwestern Institution
 - (with special emphasis on Mechanical Engineering).



Underrepresentation as Trauma

RESEARCH DESIGN



Cultural
Norms/Values

Historical
Context

Immediate
Environment

Utopia

Storytelling framework developed by JoAnne Banks-Wallace (2002) rooted in African American Oral traditions

Underrepresentation as Trauma

PROJECT BACKGROUND

- Purpose: rich collection of **African American students' experiences** as related to the culture of engineering at a Predominantly White, Large Midwestern Institution
 - (with special emphasis on Mechanical Engineering).
- These experiences will be gathered through one-on-one **interviews** of students and **focus group** sessions with groups of 5-10 students.
- Prompts for interviews and focus groups will include **broader experiences** (program-wide, Purdue culture, etc.) with narrowing focus to **critical incidents**.
- Analysis of these collections of experiences will identify **patterns and themes** within and across students to provide **insights into the variety of cultures with which the students' engage** and how they interact to **inform the ME culture** as experienced by African American undergraduate students.

RESEARCH DESIGN

Phase 1: Context and Values

- Group focus group aimed to understand the cultural values and expectations of students.

Phase 2: Immediate Environment

- Individual interviews of experiences in Engineering Department

Phase 3: Progress

- Group Focus group on what could be done to affect change in departmental climate

RESEARCH DESIGN, STORYTELLING AND RELATIONSHIP BUILDING

Pre-Research

- Visibility
- Targeted Recruitment
- Sensitivity
 - Time and Energy
- Design beyond Research Goals

During Research

- Semi-Structure Protocol
- Allowing Tangents
- Supporting Back and Forth
- Silent Times

Post Research

- Member Checking
- Continual Relationship and Acknowledgement
- Personal Responsibility

PHASE I: FOCUS GROUP PROTOCOL

Before we begin, I wanted to go over a few safe space guidelines:

- Speak from your own experiences
- Everything that is discussed in this room stays in this room
- When discussing experiences, try not to use names

Interview (80 mins)

- On a sheet of paper or in your head, take some time to quietly reflect on your values, be they personal, cultural or otherwise. **(5 mins)**
- For example, **I value** creativity and original thinking. **To me this means** that is important to be in spaces where I am able to think and speak freely and outside of the box of conventional expectations. **This can be seen in** the type of research and hobbies I involve myself in.
- How would you describe your values? **(10 mins)**
- How do these values inform the person you are today? **(5 mins)**

PHASE I: FOCUS GROUP PROTOCOL

Some values are easy to express, others only become apparent within conflict. Feel free to share situations in which you felt like you didn't belong and discuss how your values were different from your perception of the values others involved in the conflict.

Think of an experience that really affected you emotionally or mentally. Describe that scenario. **(20 mins)**

- **What is it that you felt like wasn't understood/heard/valued? (5 mins)**
- What coping strategies do you use?
- How do you express/relate the values at: **(10 mins)**
 - At Purdue?
 - In the college of Engineering?
 - In your major college?

How do you think your values play a role in **(10 mins)**

Your decision to come to Purdue

Your decision to do engineering?

Your decision to do your major?

Your persistence at Purdue?

Do you feel like your values are represented at Purdue?

In Engineering? In your department? **(10 mins)**

Have your values changed in your recent past? If so, how **(5 mins)**

How do you see your values growing?

Is there anything else you would like to share about your values?

PHASE 2: ONE ON ONE PROTOCOL

From Focus Groups

- Lets start by reflecting on the last time we spoke. Do you remember the things we talked about in the focus groups?
- What parts of the conversation we had during the focus group stand out in your memory?
- Why?
- Would you like to discuss that more?
- Take a second to review the sheet you wrote on during the first interviews
- Are there any values you would like to change or add?

Values and Cultural Background

- Now I would like to go a little bit deeper into your values,
- Are there any experiences in your education before Purdue that inspired or renewed any of these values?
- Tell me about how you think these values relate to your cultural background?
- How would you describe your culture/upbringing?

PHASE 2: ONE ON ONE PROTOCOL

Looking at this chart:

- Can you tell me about an experience when you felt like your cultural background or values were acknowledged?
- Can you tell me about an experience when you felt like you, your cultural background, or values were ignored or dismissed?
- Can you tell me about an experience when you felt like you, your cultural background, or values were misrepresented or misunderstood?
- Can you tell me about an experience when you felt like you or values were supported?
- Can you tell me about an experience when you felt like you, your cultural background, or values were appreciated?
- If not on this chart, are there other settings in which you've felt appreciated?
- Are there any other areas you would add?
- Would you push any of these areas together?

	Engineering Department			Extra-Curricular	
	Dean	Administrative Staff	Academic Advisors	Peers/Friends	Student Organizations/Clubs
Values					
Cultural Background					
You as a Person					
	Courses				
	Professors	TA's	Group Work	Peers	Assignments/Course Content
Values					
Cultural Background					
You as a Person					

PHASE 2: ONE ON ONE PROTOCOL

Self-Concept

- What type of affect do you think your experiences within your college have had on the way you understand yourself? (Encouraging, Critical, Negative, etc)
- The way you relate to your cultural background?
- How you see yourself as an engineer?

Sentiments toward Engineering

- How have your experiences in your department shaped or grown your feelings/understanding of engineering?
- Do you feel engineering is something you plan to do in the future?
- What concerns do you have about the engineering field?
- What excited you about the engineering field?

Closing

- What else should I know that you haven't told me?
- What is something you've been wanting to share but haven't yet?

PHASE I AND 2

What are Microaggressions?

“Racial microaggressions are brief and commonplace daily verbal, behavioral, or environmental indignities, whether intentional or unintentional, that communicate hostile, derogatory, or negative racial slights and insults toward people of color”

Cultural
Norms/Values

Historical
Context

Immediate
Environment

Values and Norms

Students say they value Perseverance/Hard work, Family, Originality, Honesty and Education

Students feel that some of their values align with Purdue, such as Giving Back to the Community and Hard Work and Persistence.

Other values are not represented at Purdue including: Creativity And Open Mindedness, Diversity, Representation, Seeking Knowledge and Social/Cultural Awareness

Historical Context

Historical precedents manifest themselves through negative perceptions and attitudes of people they encounter

Cultural background acknowledged within their **friend groups and student organizations.**

Classmates often hold misrepresentations of their cultural background that affect how they are treated.

Immediate Environment

Local Experiences around the campus reflect bias and underrepresentation

Within the University
Students report that they felt outright **mislead about the university's diversity priorities**

Within Classrooms, students discussed the experience of being the only African American in their classes and acknowledged that it **affects the way they interact in classes.**

Students reported being asked to complete less technical or difficult tasks and that their **input was often ignored or dismissed.**

Within Group work, students experience peers doubting their abilities in the form of: disbelief in high performance, common accusations of cheating and assumptions of failure

African American students in this study also reported encounters with from university staff that revealed underlying doubts in their abilities. (Advisors, Mentors, etc.)

Students also reported feeling **culturally disregarded by Professors'** views of respectability

PHASE 3: FOCUS GROUP

- What would a University design around your values look like?
- Do you think this sort of institution is possible?
- What steps would we need to take to get there?
- How would you like this research to be used?



Utopia

PHASE 3: FOCUS GROUP

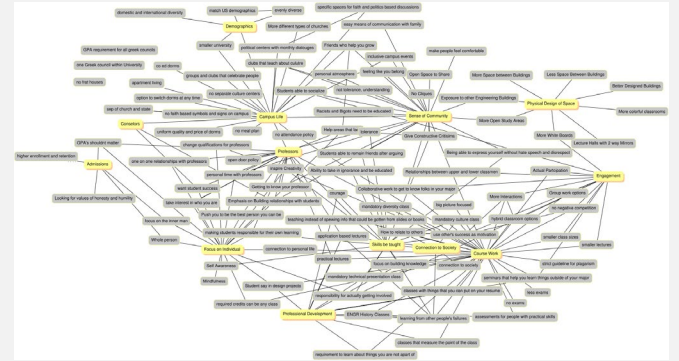
- **What would a University design around your values look like?**
- Do you think this sort of institution is possible?
- What steps would we need to take to get there?
- **How would you like this research to be used?**



Utopia

STUDENT UTOPIAN UNIVERSITY

- Demographics
- Campus Life
- Sense of Community
- Engagement
- Professors
- Counselors
- Admissions
- Focus on the Individual
- Professional Development
- Skills to be taught
- Connection to Society
- Course Work



STUDENT UTOPIAN UNIVERSITY

Demographics

Campus Life

Sense of Community

Engagement

Professors

Counselors

Admissions

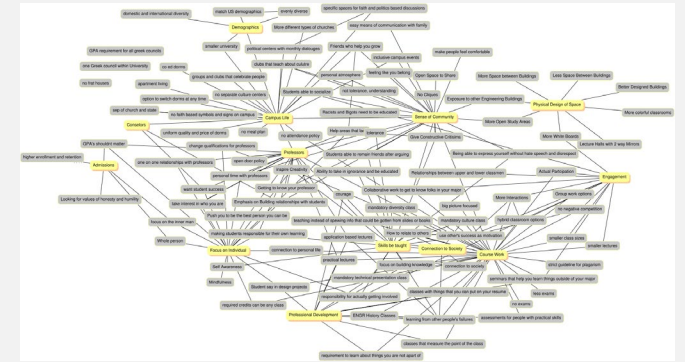
Focus on the Individual

Professional Development

Skills to be taught

Connection to Society

Course Work



STUDENT UTOPIAN UNIVERSITY

Course Work

Connection to Society

Smaller classes

Hybrid options

No negative competition

Big Picture Focused

Less exams

Classes with things you can
put on your resume

Application based lectures

Learning from other peoples
failures

Student say in design projects

Engr history class

Multiple forms of assessment

Skills to be taught

Requirement to
learn about things
you are not a part of

Courage

How to relate to
people

Self awareness

Professors

One on one relationships

Getting to know your professor

Emphasis on relationships

Open door policy

Inspire creativity

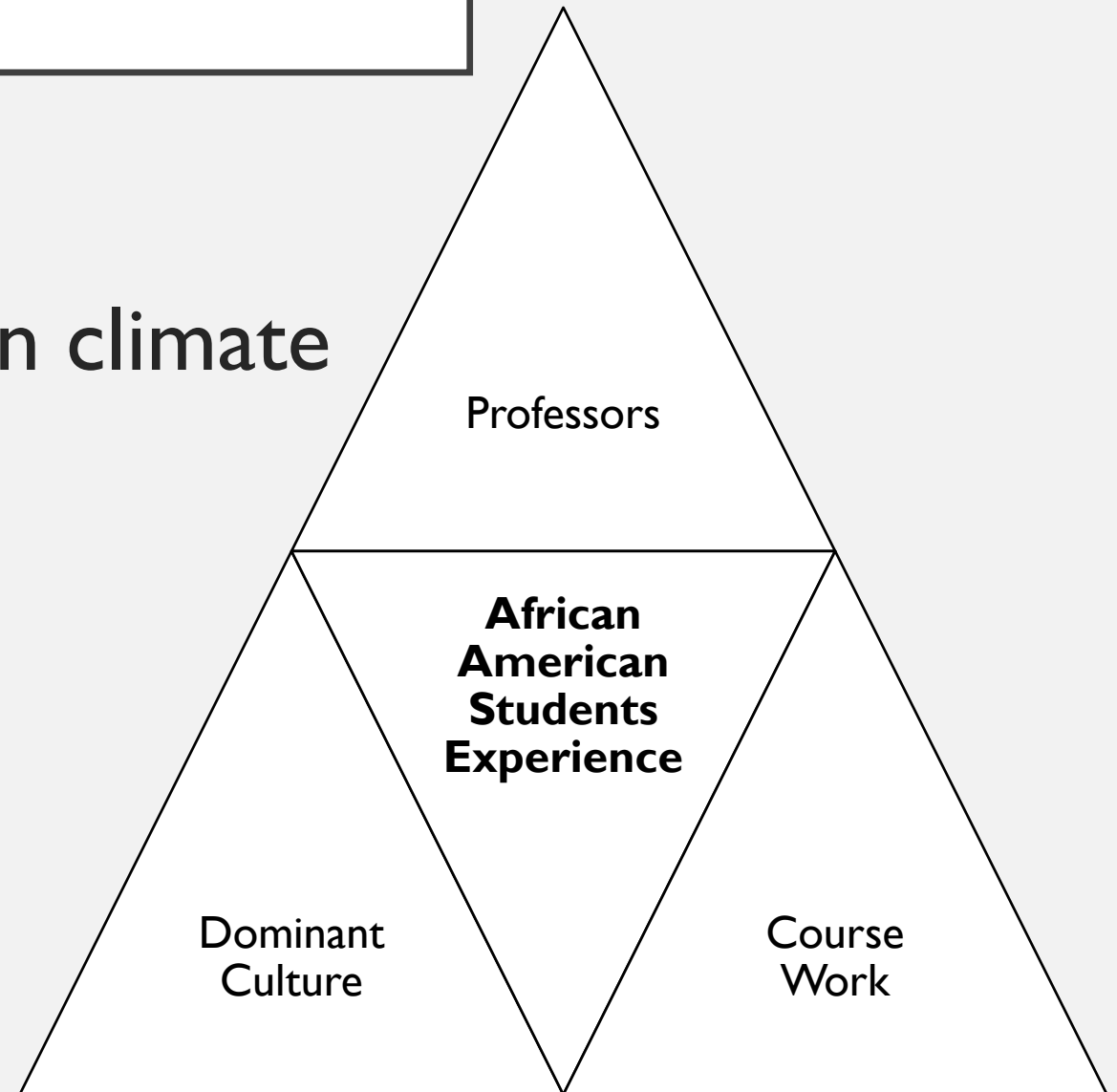
Want student success

Take interest in who you are

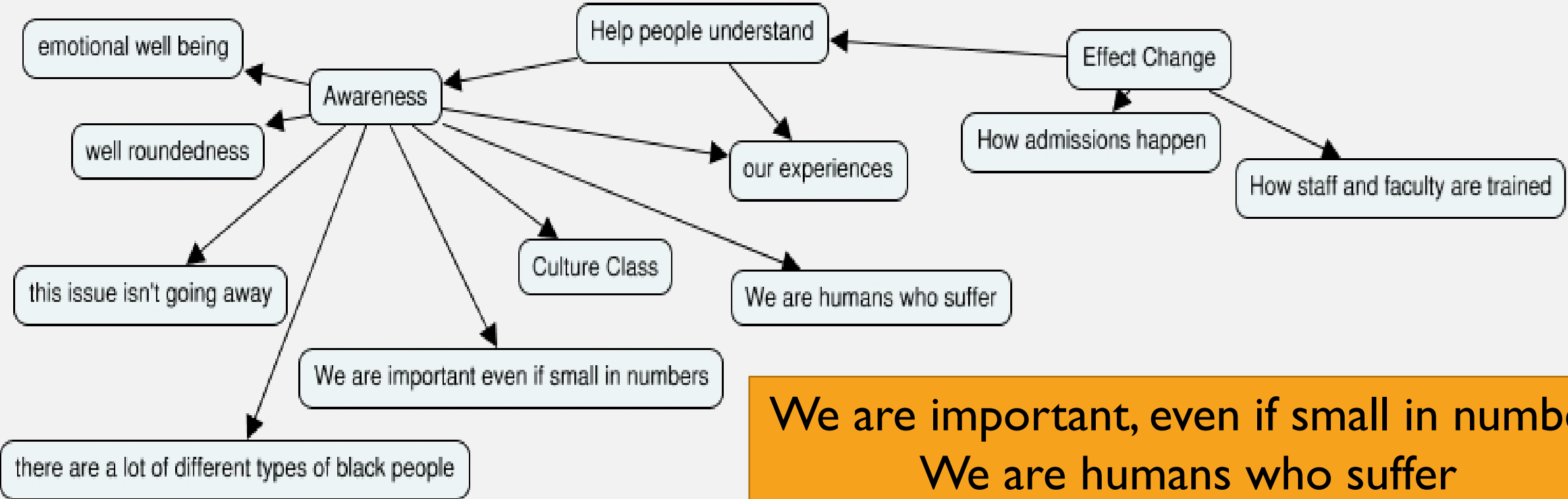
Teaching instead of information
spewing

HIGH LEVEL SUMMARY

- Students want a change in climate
 - Coursework
 - Relations with students
 - Relations with faculty



HOW WOULD YOU LIKE THIS RESEARCH TO BE USED?



We are important, even if small in number
We are humans who suffer
This issue isn't going away
Effect Change

Mechanical Engineering: Diversity Transformation Award

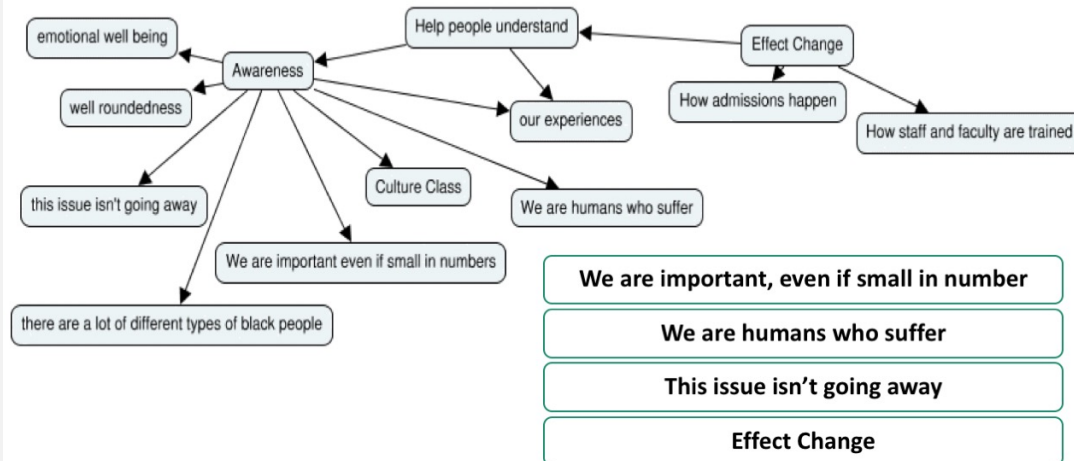
Understanding the Experiences of African American Engineers at a Predominately White Institution

Student Voices

What type of university would you like to come back to?

Physical space	Social Engagement	Professors
<ul style="list-style-type: none"> • More Collaborative and Personal Spaces • No traffic • Better parking • No snow • No construction 	<ul style="list-style-type: none"> • No microaggressions • Empathy • Majority population interesting in learning about minorities • Less division • Accountability 	<ul style="list-style-type: none"> • Who want to teach • Who care

How would you like this research to be used?



Mechanical Engineering: Diversity Transformation Award

Understanding the Experiences of African American Engineers at a Predominately White Institution

Research Next Steps

Observations of Student Spaces (Fall 2018)

- NSBE meetings, MEP, Black Cultural Center, and ME classrooms and spaces

College of Engineering collaboration follow through (Fall 2018 – Winter 2019)

Purdue Collaboration follow through (Fall 2018 – Winter 2019)

- RED Data Collaboration and Publishing
- Butler Center Comparison Group

Recommended Focus Areas:

- ME Faculty Culture
- COE Faculty Culture



Sources For More Information

Racial Microaggressions in Everyday Life

- <http://world-trust.org/wp-content/uploads/2011/05/7-Racial-Microaggressions-in-Everyday-Life.pdf>

Implicit Bias

- Education: Greenwald, A. G., & Krieger, L. H. (2006). Implicit bias: Scientific foundations. *California Law Review*, 94(4), 945-967.
- Testing: <https://implicit.harvard.edu/implicit/takeatest.html>

Racism and Invisibility

- http://dx.doi.org/10.1300/J135v06n02_02

Coaching Resources

- <https://www.purdue.edu/studentsuccess/news/purduepromise17.html>

Active Listening

- <https://www.mindtools.com/CommSkill/ActiveListening.htm>
- <http://www.commisceo-global.com/blog/active-listening-cross-cultural-business-communication-skills>

TAKEAWAYS

- Forms of Trauma and Healing
- Value of Qualitative Research
 - Beyond Surveys
 - Beyond “Do no Harm”
- Relationship Building
 - Make no assumptions
 - Ethical treatment of connections
 - Personal Responsibility for data
- Personal Advocacy
 - Trauma and Self Care
- Power of Utopia + Storytelling
 - Researchers
 - Participants
- Value of Emergence
 - Humility, Trust, Patience
 - Research on Research?

