Purdue University College of Engineering - Call to Action

July 30th, 2020

To the Purdue University College of Engineering Leadership Team:

In 1971, Edward Barnette and Fred Cooper, both undergraduate engineering students, approached the Purdue University Dean of Engineering to address on-going diversity issues, with two primary goals, to increase Black Student recruitment and retention within the College of Engineering (CoE). Together, with their faculty advisor, Arthur Bond, an Electrical Engineering Ph.D. candidate, and Purdue staff member, they created the Black Society of Engineers (BSE).

Shortly after the inception of the BSE, Tony Harris, 1974-75 BSE President and 1975 Mechanical Engineering Graduate, alongside the BSE Executive Board, brought a national body together at Purdue University to launch what is known today as the National Society of Black Engineers (NSBE). Today, NSBE is arguably one of the most widely accepted and successful student-driven diversity and inclusion initiatives for Black Engineering Students around the world.

The year 2020 marks 45 years since the incorporation of NSBE on a national level. However, the current enrollment numbers of Black Engineering Students at Purdue dropped below enrollment numbers in 1975. As the Purdue, Mother Chapter of NSBE, we write this Call to Action to recover the mission of NSBE and restore the enrollment numbers of Black Engineering Students, but furthermore, to continue the dreams and legacies of Mr. Barnette and Mr. Cooper. We maintain similar goals of increasing the number of Black Faculty and Staff, increasing Black Student recruitment and retention, providing more resources, and creating a safer space for Black Engineering Students to learn and grow both academically and professionally.

Throughout Purdue's 151-year history, there have been many apparent strides towards creating a more diverse and inclusive institution for students, faculty, and staff alike. Developing, implementing, and maintaining solutions to on-going problems that will affect members of the Purdue Community for generations to come is no minuscule endeavor. However, when potential solutions are established and abandoned, the remnants of an ill-maintained solution leave a taint remark on Purdue's Diversity and Inclusion report card. Additionally, it speaks to the character and mission of what is essential to the leadership of this institution.

As time passes by, the first-hand executive College-level responsibility has become non-existent with the delegation of diversity and inclusion directives to offices such as the Minority Engineering Program (MEP) and the Women in Engineering Program (WIEP). However, providing money to minority-based programs and setting macro-level directives is simply not enough. The burden of recruitment, retention, engagement, and graduation remain but instead are funneled to underfunded and overworked offices and the students of the College with no cross responsibility of the CoE leadership.

Despite the increased student responsibility and commitment to diversity and inclusion, the absence of statements addressing the on-going issues in America, leaves us to wonder, does Purdue, the school we so gladly represent, see all of us – Black Boilermakers? Purdue remains the only institution of the Research One classification not to produce a statement clearly stating their empathetic support of their Black community while acknowledging their pain, fear, and anger and denouncing racism in the Purdue community. How disheartening, especially for an institution that claims to "move the world forward."

"To Increase the Number of Culturally Responsible Black Engineers who: Excel Academically, Succeed Professionally, and Positively Impact the Community."

🌐 purduensbe.org   @ purdue.chair@gmail.com   🐦 @NSBEPURDUE   📷 @NSBEPURDUE

📍 Hampton Hall of Civil Engineering, Room 1246, 550 Stadium Mall, West Lafayette, IN 47907

These actions lead us to believe that the University and CoE do not understand nor acknowledge our experience(s), support our fight for justice and equity, and denounce racism - both on-campus and abroad. Furthermore, it shows that the CoE is unaware or ignorant of the actions that are occurring and making their students feel neglected or unacknowledged. However, as a Dean, there is an underlying expectation that they are au courant with all of the happenings of their College; it is apparent that this is not the case. Statements from members were collected to shed light on issues that have occurred, and they are summarized below:

"I feel like the College of Engineering doesn't realize how much it impacts students when they don't see professors who look like them in a classroom of kids who also don't look like them."

"Does the College of Engineering care that its students feel overlooked? All the engineering schools seem uninterested in the well-being of their students, especially in a time like this when their students need their support the most. How am I supposed to go back on campus and feel safe?"

"Being one of the very few Black people in my program, it is hard to feel like others openly welcome you. Moreover, in a small program, you realize how many cliques exist and how people look at you differently when you walk into a room. We only have one advisor who very obviously picks favorites and is not supportive of students' endeavors if they are not a conformist to the archaic policies and procedures that the program has in place. It is not a good environment for any minority student who wants to do something untraditional and needs support from the department personnel."

"I feel anytime there is ever anything for students of color, it's always hosted by the same departments, like diversity and inclusion or outreach, or MEP, or NSBE. I feel like it's people who they themselves identify as this underrepresented group, or they're getting paid to promote diversity, whereas the University as a whole is sort of clueless or doesn't really care."

To create a better space for the Black engineers at Purdue, we have compiled a list of action items that the CoE must take. If the College truly supports its Black Students, Faculty, and Staff and their well-being, these action items need to be taken seriously as immediate action and response are necessary. To ignore these straightforward action items would be blatantly disrespectful and shows that the CoE is not fully invested in the "hot-topic" of essential change.

1. **Develop and implement a sustainable plan with reasonable metrics to recruit, retain, and promote Black Faculty and Staff**

Spoken in the wise words of Terrell Strayhorn, keynote speaker at Purdue's Maximizing Student Potential Conference in Fall 2019, "In terms of college, sense of belonging refers to student's perceived social support on campus, a feeling or sensation of connectedness, and the experience of mattering or feeling cared about, accepted, respected, valued by, and important to the campus community or other on-campus such as faculty, staff, and peers."[1]

Black faculty are vital components for fostering an environment where Black Students can confide in and look up to a high-academically achieving individual.[2] To be a qualified engineering faculty member, one must have a Ph.D. in a realm of engineering and knowing that engineering is one of the more challenging fields, but seeing someone with such credentials serves as an inspiration to many. To assist with the difficulty that Black Engineering Students face during their educational journey, Black Faculty who have dedicated their career to studying and teaching engineering serve as an invaluable resource. They can relate to a student's current experience and serve as critical resources to students as they are going through the tough time of obtaining their engineering degree.[3]

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[1] College Students' Sense of Belonging: A Key To Educational Success For All Students
[2] Black in Engineering - Call to Action
[3] How Students Benefit From Teachers Who Look Like Them | Teach for America

Black staff promote a space outside of academics where students can share their feelings and experiences without feeling ostracized. They serve as an individual to confide in when there are issues personally and academically. There are not many Black advisors, if any, in the CoE, which can be a severe disservice to students who are facing microaggressions or have advisors that may not fully understand their experience. With more Black advisors, students have the option to seek additional advising from someone who may better understand their experience and provide more thorough guidance.

2. Support NSBE members in their professional growth

NSBE conventions allow members to connect and network in an environment of 10,000+ aspiring and current Black STEM professionals. These events consist of workshops as well as a career fair that brings 200+ companies annually. The impact they create on members is monumental. However, financial barriers such as registration, transportation, and lodging keep many of our members from participating in such impactful opportunities. Year-over-year, our chapter attendance is sub-par because of these financial burdens.

For the March 2020 NSBE Annual Convention, the cost for 80+ members to attend was covered in full by the various engineering schools; however, due to COVID-19, the convention was canceled. To ensure that our chapter can take advantage of sending members to the NSBE conferences and conventions in the future, we request that the CoE make a long-term commitment to providing funding to eliminate or significantly subsidize the costs for members.

3. Expand the recruitment strategy for prospective Black Students

The funding currently allocated to MEP programs must be increased. There are multiple long-standing summer programs put on by MEP, such as Preface, Multiethnic Introduction to Engineering (MITE), and Academic Boot Camp (ABC), which are all geared to attract, engage, and prepare Black Students that are interested in STEM. Scholarships should be available to these students who are interested in attending MITE or ABC to help diminish financial barriers that prospective students may face. Moreover, many students who matriculate into Purdue through these pipeline programs have high financial-need and are not able to attend Purdue due to affordability. We request that the college fund a minimum of ten NSBE, four-year scholarships, to award incoming Black Engineering Students who have participated in previous MEP programs and become NSBE members. MEP should handle these scholarships.

Currently, the Purdue NSBE Chapter has a NSBE Jr. Chapter at McCutcheon High School, where we mentor and engage with Black Students about various STEM fields. To increase support for the NSBE Jr. chapter, we request the CoE provide resources that allow students to participate in projects that increase their exposure to STEM. This would include purchasing circuit starter kits, and robotics equipment, but also gaining access to other CoE resources to provide 3D printing opportunities as well as access to ECN labs to utilize Purdue's software. It would also be beneficial to have a pool of faculty resources that engage with the students and host basic classes that pertain to the usage of these resources.

4. Require the senior leadership from each school in the College to attend a NSBE General Body Meeting

The stimulus to converting the BSE to the NSBE was racism, isolation, attrition, and exclusion, experienced nationally. The organization was endorsed by all of the students that traveled to Purdue in 1975 to establish NSBE. Beyond NSBE, the WIEP, Engineering Projects in Community Service (EPICS), and the School of Engineering Education all began at Purdue University. Each organization was founded to address social issues around the world.

Of these organizations, EPICS and Engineering Education, in particular, receive a consistent tremendous outpouring of support from the CoE and others. Furthermore, the statistics show that the CoE dedicated resources to increasing the number of women in engineering demonstrated in the 6% increase in female enrollment since Fall 2008 in comparison to Fall 2019.[4] While the number of women increased steadily without decline over the years, the Black Engineering Student population suffered tremendously, which is shown in the preliminary Fall 2020 enrollment numbers with about 27 incoming Black Students.

We ask that similar to the organizations mentioned above, NSBE receives more in-person support from the CoE Deans and Department Heads. It is of value for our members to have facetime with the leadership of the CoE. By doing this, leadership can express on-going initiatives, but furthermore, establish a clean-cut line of communication so that students know their voices are heard and that the administration maintains an open door and open ear for student concerns.

5. Hold an open forum for students to express racial disparities and grievances with the various Engineering Department Heads and Deans/Assistant Deans of Engineering

This annual forum intends to help build a relationship between the Engineering Heads and Black Engineering Students; furthermore, develop a safe space for students to use their voices and share their experiences and challenges while being an engineering student at Purdue University. Students are the University's best promoters. Negative experiences leave a lasting impression on individuals, but they also speak much louder than that of positive ones. If the University doesn't protect students and act on negative experiences, students will find it hard to speak highly of a place, especially when they feel that the necessary actions to ensure a positive experience were not taken.

There are encounters that Black Students face while attending a Predominantly White Institution (PWI), which Purdue and its faculty and staff need to be cognizant of.[5] By moderating this forum, these encounters are unveiled, and together, we can create and implement solutions so that those experiences do not become recurring events.

6. Revise and revamp an annual bias training that promotes allyship and anti-racism

Faculty and staff must be consciously aware of what their Black Students face on campus. Specialized bias and diversity training that dives deeper into racial issues than current trainings in place is something that faculty, staff, and RAs must be required to take.[6] Necessary impactful training is one that highlights how systematic racism has shaped the culture of higher education nationwide, teaches individuals how to handle instances of racism properly, thoroughly explains unconscious biases and how to check them, dismantles microaggressions, and demonstrates what it means to be an ally. [7, 8, 9, 10] Also, faculty and staff should be supported in developing individual diversity, equity, and inclusion action plans that outline the specific actions they can take to advance diversity, equity, and inclusion goals. This plan is something that should hold them accountable but also reward them for making progress on their plans in annual performance reviews.

An Engineering Ethics class must be incorporated into CoE students' plan of study requirements for graduation. Engineering Ethics topics span far beyond what can be covered in one or two lectures. A one-credit, eight-week course that goes over the basics of ethics of engineering, while also discussing fostering diversity in the workplace, microaggressions and their effects, and what it means to be an ally and anti-racist is necessary for the professional development of students. Remaining silent is not the answer, and not acting in fear that this addition may put the CoE in a politicized arena is a shallow excuse. Supporting Black Engineering Students' lives and well-being is not a political matter.

[4] Purdue University CoE - Male and Female Percentages
[5] NAMI - Black/African American
[6] Critical Practices for Anti-bias Education: Teacher Leadership
[7] Anti-Racism Resource List
[8] How To Be An Antiracist
[9] Culturally Relevant Pedagogical Practice Among White College Faculty
[10] Homepage - Vice Provost for Faculty, Carnegie Mellon University

7. Establish a CoE specific Diversity Index Report

To establish necessary transparency within the CoE, we demand to see quantitative data that highlights the number of Black Students, Faculty, and Staff per major in comparison to the other races represented in the CoE over the last six years. This report should be updated annually and made available publicly. The student data should include the number of student applicants, admits, and matriculations[11] as well as retention and graduation rates for Black Engineering Students within the CoE.[12] This information is currently <u>not available</u> to the public via the Purdue University Data Digest[13] and requires a login to get data on the categories, Race/Ethnicity, Underrepresented Status, and Major. This report can be shared when engineering leadership attends NSBE General Body Meetings.

8. Create a larger space for Black Engineering Students

The MEP office is a space that many minority engineering students call home. The current capacity of this space only accommodates roughly 30 students; however, there are events where over 60 students need to be present at any given time. The space limitation restricts MEP from holding impactful events for students throughout the day when classrooms are utilized. MEP has grown and should continue to grow, but the space in which it occupies does not reflect that. Simply put, there is not enough space for students to receive academic support, socialize, or seek guidance from the MEP core staff. MEP can only grow within their limitations, and right now, space is a limiting factor and stunting the necessary growth. If the CoE is committed to expanding its Black Engineering Student population, then they need to invest in finding a larger space for MEP and the students they serve.

9. Expand design/research programs to take on projects that are focused on African American communities

Based on the description, "EPICS is a service-learning design program in which teams of students partner with local and global community organizations to address human, community, and environmental needs."[14] Yet, very few EPICS projects, if any, are geared towards addressing the issues that plague Black and low-income communities around the nation. There should be a desire for EPICS to support Black communities in Indiana and neighboring states. Projects led by MEP, WIEP, the Office of Future Engineers (OFE), or a similar office with the ability to mobilize a culturally responsible and relevant team in tandem with Purdue Engineering research labs could be very impactful. With the proper training and understanding to tackle social issues in underrepresented communities, Purdue EPICS could be the organization that develops impactful solutions to on-going crises around the nation.

We, the Black Students of Purdue University's CoE, are resilient, valiant, and eager. While we offer these actions as a starting point, the CoE must engage in continued conversations to address this evolving situation as well as bring attention to and address unforeseen or unknown circumstances that may arise. We know this is not the end, but a start to an uphill battle. However, we will not recede nor succumb to the College's subpar treatment; we will press on, and we will be heard. We demand the respect we so rightfully deserve. The opportunities for improvement in support of Black Engineering Students are endless, and we hope and trust that the College will choose to engage to provide the same opportunities and publicly proclaimed experience to ALL students that it serves.

Signed,

The National Society of Black Engineers at Purdue University

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[11] [Purdue University CoE - Applications, Admits, and Matriculations](#)
[12] [Purdue University CoE - Retention and Graduation Rates](#)
[13] [Purdue University Data Digest](#)
[14] [EPICS - Purdue University](#)

Afterthoughts and Appendix

As students and a chapter, inherently, we represent and support the CoE and have a duty to fulfill the NSBE Mission, "To Increase the Number of Culturally Responsible Black Engineers who Excel Academically, Succeed Professionally and Positively Impact the Community." However, the CoE has not upheld their commitment to Black Students in light of the recent deaths of Ahmaud Arbery, Breonna Taylor, George Floyd, and so many more, coupled with the continued injustices of Black People in America.

To be a Black Student at an institution that is seemingly against you with expectations unimaginable forges an inexplicable level of resiliency in each Black Student that steps foot on the campus of Purdue University. The students of Purdue University, especially engineering students, pay a steep price for said resiliency both literally and figuratively. The cost is their mental health, social well-being, academic well-being, and so much more all at the hands of an institution that prides itself on "[creating] a place where everyone has the opportunity to excel. An academic environment where everyone's contributions and perspectives are respected and valued. A campus community where barriers to respect and collaboration are eliminated."

To ensure more voices are heard, the remaining member responses are below:

"It feels like the College of Engineering doesn't care about their Black Students. Nor do the individual engineering schools care to send out an email or a response to their students to show that they are willing to support and care for their students."

"My TA in ENGR 132 would repeatedly ignore my questions, and he would always answer the male students. When he answered my female teammate or me, he would speak in a condescending tone. I didn't report him to my professor because he was my grader."

"During group projects, sometimes my intelligence is questioned because of my background."

"For many students, the honors first-year engineering program was difficult, but what stood out to me when I took the class in 2016 was how often honors engineering students would look down on non-honors engineering students. This frustrated me because there were no clear criteria for students to be admitted to the honors program and because I've seen time and time again how the honors classification does not automatically make you a more competent engineer. When I looked around the class, I saw that I was one of the few Black Students in the honors sections, and many of the other black engineers I knew were in non-engineering sections. I often would feel as if I didn't belong in the honors program when I struggled to understand the concepts and to complete the exams. Some team members I had would also ignore or downplay my suggestions for projects instead of working together to come up with a solution as a group. I do not know if that behavior was racially motivated, but I believe it still stemmed from an innate sense of superiority that many engineering students have about their own abilities. Through many hours spent working on my own, with my professor and during office hours I was able to pass the class, but when I looked up at the end of the second semester, I saw that many of my black and minority friends who started the honors program with me were no longer present. I knew many people who were encouraged by their advisors to transfer out of honors engineering, but they then had to face the consequences of being behind a semester, makeup more classes, and have an even lower chance of making it into their engineering school of interest. Ultimately having this kind of setback so early in an engineer's career makes it more difficult to graduate on time, affects their financial aid, or shifts their career interest from engineering altogether. I later mentored another young Black Student in the honors engineering program who faced similar issues. Even though they changed the class curriculum, I did my best to encourage her and help her to see beyond the stress she may experience in the class. She later became a grader for the class and took up a similar mission to encourage Black Students she saw in the honors engineering program. My hope is that creating a positive and uplifting culture is not a burden felt only by minority students in the program, but that everyone can have that attitude instead of trying to outperform their classmates. By creating that kind of environment, it could help to improve the overall retention rate of minorities in engineering."

"I've been in the ME help room working on homework. Students usually collaborate a lot in those rooms. A student will ask a question to the table, and I have answered, explaining the process of the solution. I used to only answer questions confidently that I've already discussed with a TA. I just don't answer questions at all anymore, because there is an uncountable number of times I tried to talk to other students, but they don't believe me unless another student jumps in. I stay quiet now because it has become apparent to me that my help, even if it is right, is unhelpful coming from me. I don't even go to work in the ME building anymore unless I have specific questions so that I can go in and out. It's not anyone's specific fault. I think it's just a product of deep, deep subconscious racism and sexism. It's hard for them to believe a Black woman would have much to offer a table of engineers, and when I'm ignored so consistently sometimes, it's hard for me to believe as well."