The Future of Engineering Education
2024 Annual Conference & Exposition

Oregon Convention Center
Portland, OR . June 23 - 26, 2024

ASEE

Paper ID #42441

The Impact of the New DEI Landscape on Minoritized Engineering Students' Recruitment and Retention

Jordan Williamson, CSEdResearch

Jordan Williamson graduated with a BA in English from the University of Texas at Austin. Her research interests center on minority experiences in the American Education System.

Dr. Julie M. Smith, CSEdResearch.org

Dr. Julie M. Smith is a senior education researcher at CSEdResearch.org. She holds degrees in Curriculum & Instruction and Software Development. She also completed a doctoral program in Learning Technologies at the University of North Texas. Her research focus is computer science education, particularly the intersection of learning analytics, learning theory, and equity and excellence. She was a research assistant at MIT's Teaching Systems Lab, working on a program aimed at improving equity in high school computer science programs; she is also co-editor of the SIGCSE Bulletin.

Dr. Monica McGill, Institute for Advanced Engineering

Monica McGill is President & CEO of the Institute for Advancing Computing Education (formerly known as CSEdResearch.org). Have previously worked in industry and academia, McGill is using her experiences as a computer scientist, professor, and researcher to enable others to build a strong foundation of CS education research focused on all children while also conducting it with partners and collaborators.

Three Bad Words: Perspectives on the Changing Landscape of Diversity, Equity, and Inclusion in Postsecondary Institutions

Jordan Williamson[1] and Monica M. McGill[2]

[1,2]Institute for Advancing Computing Education
[1]jordan@csedresearch.org [2]monica@csedresearch.org

Abstract

Research Problem. The U.S. Supreme Court cases and state legislation have forced significant changes to higher-education institutions' diversity, equity, and inclusion initiatives. But what remains unknown is how these changes are perceived by staff who support these initiatives at postsecondary institutions, what outcomes they expect to see from these changes, and how their institutions are handling the transition to compliance.

Research Question. *In what ways has the 2023 U.S. Supreme Court decision limiting race-conscious admissions as well as similar state laws affected the recruitment and retention of minoritized engineering students at public universities in one state?*

Methodology. In this qualitative study, we interviewed six staff members from different public universities in one state where laws prohibiting diversity, equity, and inclusion offices to support students have been enacted. Excerpts from semi-structured interviews were coded then synthesized into a narrative outlining the anticipated changes mentioned by participants.

Findings. Participants noted three key areas of concerns: impacts on student recruitment, impacts to student support, and impacts to faculty and staff, including the frustration and confusion felt by faculty who want their students to succeed and are unsure how to help without appearing to violate laws. Reductions in students, staff, and faculty from historically marginalized backgrounds is also anticipated.

Implications. While much more evidence on impacts of these new laws will grow over the next few years, faculty, staff, and institutions that want to maintain or increase their enrollment will need to wrestle with how to do so in a shifting, challenging environment where even the appearance of violating laws may cost institutions funding and employees their jobs.

1 Introduction

On June 29, 2023, the United States Supreme Court released decisions in the cases *Students for Fair Admission, Inc. (SFFA) v. President and Fellows of Harvard College* and *SFFA v. University of North Carolina et al.* The decision of the Court, delivered by Justice Roberts, held that race-conscious admissions are unconstitutional based on the Equal Protection Clause of the Fourteenth Amendment [1].

With programs like engineering already prone to low enrollment of students from minoritized groups (e.g., students from rural communities, students with disabilities, Hispanic, Black, and

Indigenous students), the new landscape is particularly troubling to efforts to rectify *past admissions bias* [2, 3] and provide sufficient support for minoritized student populations. At the same time, the United States is witnessing a shift in demographics among K-12 students, with students from minoritized groups comprising greater than 57% of the elementary school student population across the U.S. [4].

This case follows a trend of first creating (in the latter part of the 20th century) and then dismantling higher education initiatives aimed at recruiting and retaining various student populations through diversity, equity, and inclusion (DEI) initiatives. What remains to be seen, however, are the impacts of these trends on recruitment and retention of various students into engineering programs. For example, will postsecondary institutions in these states witness a decline in overall recruitment of students? Will already-taxed faculty from marginalized groups [5] face legal issues and, potentially, be fired if they advise or speak at a club for Black engineering majors? Will students with disabilities who require additional support decide to chose to transfer to institutions that might provide more support?

Thus, our research question for this study was:

> *In what ways has the 2023 U.S. Supreme Court decision limiting race-conscious admissions as well as similar state laws affected the recruitment and retention of minoritized engineering students at public universities in one state?*

We sought to answer this question given its importance and the unknown yet immediate implications of these rulings and new laws on students and postsecondary institutions. To answer this question, we engaged in a qualitative inquiry with postsecondary staff members involved in student support services and other areas related to supporting students from different backgrounds.

2   Background

In *SFFA v Harvard*, Justice Sotomayor led the dissent, saying of the decision,

> Today, this Court stands in the way and rolls back decades of precedent and momentous progress.... In so holding, the court cements a superficial rule of colorblindness as a constitutional principle in an endemically segregated society where race has always mattered and continues to matter [1].

With the removal of affirmative action, universities are faced with the dilemma of how to diversify their student bodies and to support current and prospective students. To this end, public postsecondary institutions in places where race-based admissions had already been prohibited by state law prior to the Supreme Court ruling (e.g., Texas, California) [6] had created outreach programs targeted at high schools serving students from low-income families [7]. These programs, such as the Longhorn Opportunity Scholars in Texas and Centuries Scholars in California, provide access to resources and scholarships for students in the top upper percent of their class. While these programs have shown some degree of success in increasing the admission of students from low-income families at these specific schools, the focus on urban centers, particular schools, and the significant variability in effectiveness among programs have rendered them insufficient in diversifying the student body to the degree attained by affirmative action [7]. Additionally, initiatives like automatic admissions to public colleges for students in the top

percentage of their class ignore educational privilege within individual schools such as access to tutors and other educational support [8] and are thus insufficient substitutes for affirmative action [9].

Compounding the impact of the SFFA case is the increasing number of anti-DEI legislation approved at the state level. The term *DEI* in this context is used broadly to refer to practices, programs, and offices that focus on the experience of minoritized persons. In legislation, this term is used to refer to offices like Multicultural and Gender and Sexuality centers as well as initiatives and celebrations like university-sponsored Pride events. States like Texas [10] and Florida [11] have recently passed and adopted legislation restricting state – and, in Florida's case, also federal – funding from being spent on DEI programs, offices, and events. In preparation for these directives, public universities have had to take steps to either restructure or completely remove several entities. Furthermore, the burden of creating positive environments for diverse students can create unfair pressure on minoritized faculty [5]. Historically, the cultivation of positive spaces for diverse students has encumbered minoritized faculty, negatively affecting their work and research while not providing the same level of support that university programs and funding can [5].

Proponents of DEI support it because there are historical and persistent factors causing racial disparities in educational achievement and income expectations [12]. For example, microaggressions against minoritized students have been shown to correlate with larger rates of binge drinking, making DEI a matter of health and well-being. Programs supporting DEI are necessary to ensure that when university administrators say that their institutions are places for all persons to develop and grow, they also provide the resources necessary for that to be true [12]. Those supporting anti-DEI legislation state that these programs and practices place an unbalanced focus on differences, creating a distorted view of minority-majority relations in the United States historically and currently [1].

3   Methodology
To answer our research question, *In what ways has the 2023 U.S. Supreme Court decision limiting race-conscious admissions as well as similar state laws affected the recruitment and retention of minoritized engineering students at public universities in one state?*, we engaged in a qualitative study using deductive coding techniques [13] described below.

This study was covered under a broader ethics review from Northeastern University's IRB for the Engineering PLUS Alliance. As a token of appreciation, we issued a $50 USD gift card for participants who completed the interview. The interviews were conducted in late 2023.

3.1   Participant Selection
We contacted prospective participants based on their position within a public university or community college in a state where legislation prohibiting or limiting DEI offices and support has passed. We found prospective participants primarily by reviewing public postsecondary institutions' websites and searching for student support offices as well as reaching out to colleagues who might have acquaintances in the positions we were seeking. We contacted prospective participants by email. We gave preference to those with positions particularly related to engineering student recruitment, retention, and support; however, we were also open to talking to individuals who have broader experience recruiting and retaining marginalized students.

Table 1: Participant Demographics. Data provided is limited to ensure the privacy of participants.

Pseudonym	Gender (if shared)	Works specifically w/ Engineering	Field	Years of Experience
Morgan	F	Yes	Student Support	1
Bowie	M	Yes	Student Support, Admissions	3.5
Francis		Yes	Student Support	7
Karter	F	No	Grad Student Support	3.5
Rebel	F	No	Work Force Development	4
Jean		No	Admissions	1

We conducted interviews with six individuals who worked in areas such as student support services, admissions, and work force development in postsecondary institutions. Details of the six participants are noted in Table 1. In the table and throughout this paper, we use pseudonyms to protect the identities of participants.

3.2 Data Collection

We used a semi-structured interview protocol to conduct interviews (using a secure, private Zoom channel), recorded each interview, and used a secure transcription service. The interview protocol was developed by a team of three researchers who are part of the Engineering PLUS research team and have been studying similar barriers and supports for engineering students. The questions (see Appendix) probed changes participants have witnessed in their university due to laws that prohibit DEI and as well as to student support.

We replaced the participants' names prior to sending the audio for transcription, and we secured the transcripts on local, password-protected computers. We also gave participants the option to use their personal email address to further ensure their privacy. Once interviews were completed, transcripts were then uploaded on the password-protected, two-factor authenticated software (Dedoose) to facilitate qualitative analysis [14]. Interviews lasted 20 to 45 minutes.

3.3 Data Analysis

We analyzed the data using deductive coding by first developing a set of codes *a priori* for each of the themes. The initial set of codes were derived by the research team to align with the interview questions, then they were reviewed and revised. One of the researchers then used Dedoose to code the transcripts [13, 15]. When perspectives from participants did not align with an already established code, the researcher added new codes. Once completed, we reviewed the codes and themes, developing the categories from the themes. These categories and supporting evidence are provided in the Results section.

3.4 Researcher Description and Author Reflexivity

One researcher earned their undergraduate degree in a state where anti-DEI legislation has been implemented. She has has research interests in the experiences of minority individuals in white American spaces. The other researcher is a White woman who has conducted education research in equity-focused areas primarily focused on computer science. Both researchers' personal and professional experiences provide them with a critical lens for investigating impacts of anti-DEI legislation on institutions and individuals.
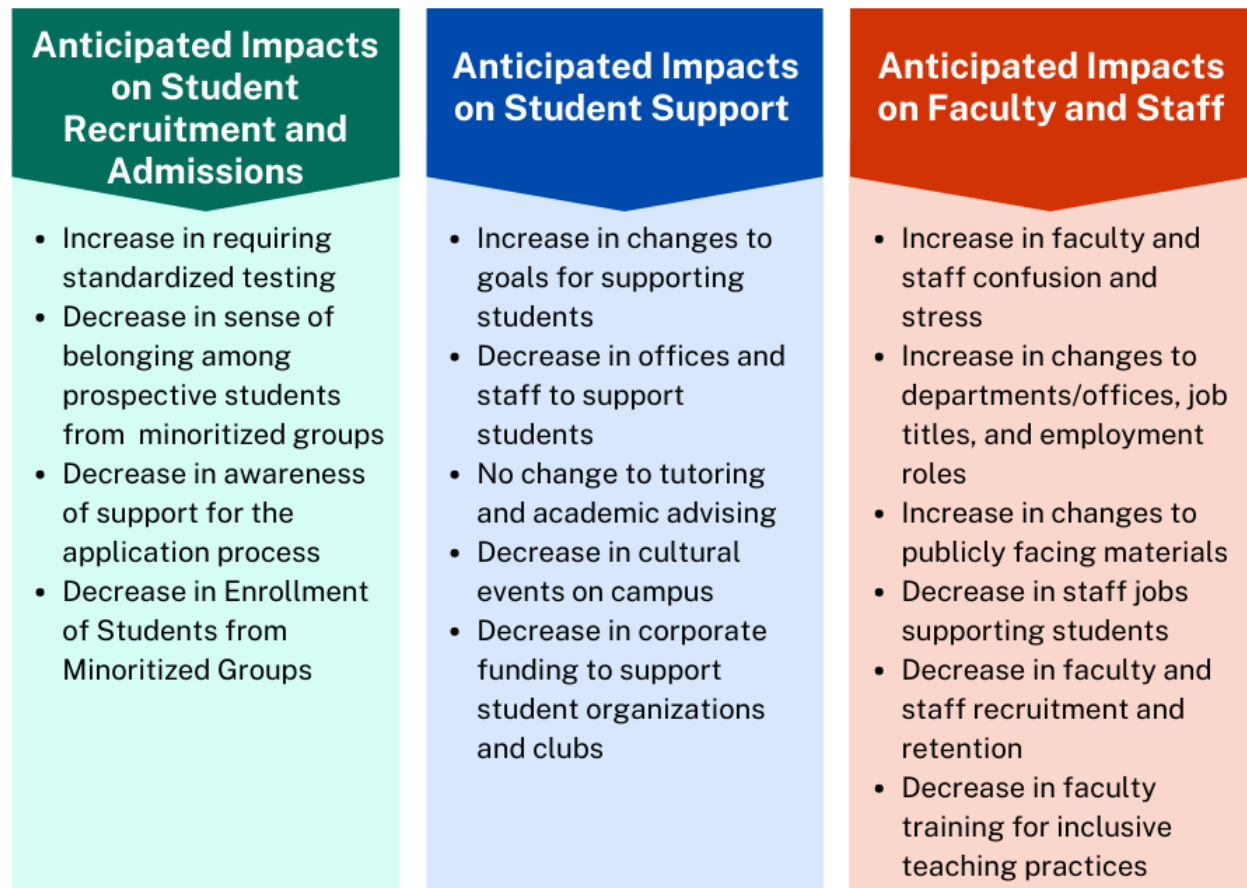
Anticipated Impacts on Student Recruitment and Admissions

- Increase in requiring standardized testing
- Decrease in sense of belonging among prospective students from minoritized groups
- Decrease in awareness of support for the application process
- Decrease in Enrollment of Students from Minoritized Groups

Anticipated Impacts on Student Support

- Increase in changes to goals for supporting students
- Decrease in offices and staff to support students
- No change to tutoring and academic advising
- Decrease in cultural events on campus
- Decrease in corporate funding to support student organizations and clubs

Anticipated Impacts on Faculty and Staff

- Increase in faculty and staff confusion and stress
- Increase in changes to departments/offices, job titles, and employment roles
- Increase in changes to publicly facing materials
- Decrease in staff jobs supporting students
- Decrease in faculty and staff recruitment and retention
- Decrease in faculty training for inclusive teaching practices

Figure 1: Summary of Expected Impacts as Noted by Participants.

4 Results and Reflections

We defined the major themes that emerged from the analysis as three primary categories:

- **Recruitment and Admissions**. Anticipated impacts on student recruitment. These are impacts related to recruiting students into programs (including engineering).

- **Student Support**. Anticipated impacts to student support, including what has changed and what types of support still may remain.

- **Faculty and Staff**. Anticipated impacts to faculty, including the frustration and confusion felt by faculty who want their students to succeed.

Several subthemes emerged within each theme, and all are described below with supporting evidence. Figure 1 summarizes participants' perspectives of the impacts from the new laws on each of these areas.

4.1 Anticipated Impacts on Student Recruitment

For the most part, potential ramifications of the new laws have yet to be seen; however, as noted by participants, expectations lean toward both a decrease in applications and a decrease in admissions from students in minoritized groups. Several participants did not expect the outcome

of the SFFA cases to have an impact on their institution's admissions either because their state already disallowed it, or because they believed that their focus on their local community has a larger effect on the demographics of their student body than any adherence or lack thereof to affirmative action policies. Karter, for example, was somewhat hopeful that their institution's status as a minority-serving institution (MSI) focusing on local communities will somewhat shield them from any major impacts of the SFFA cases. Bowie, also faculty at an MSI, expects little change in demographics except as a possible consequence of "students applying to other universities where they may or may not get into. We know a lot of our students do talk about our university being a second choice, so maybe we might be getting bumped up to a first choice with [changes to legislation] happening the way they're happening."

We grouped responses from participants into the following subcategories: increase in usage of standardized testing; decrease in sense of belonging among students from minoritized groups; decrease in awareness of support for applying; and decrease in enrollment of students from minoritized groups. We also add some further reflection on admissions.

4.1.1   Increase in Requiring Standardized Testing
Participants mentioned several ways that their institutions attempt to lower obstacles to applying for admission, such as removing application fees and moving towards test-optional applications. However, Jean's institution is a part of the state university system that is considering removing test-optional applications. Jean states that "We're at the hands of these institutions that are saying, *Yes, we might go another year test optional, we might not,* which is not good for students that really, unfortunately, don't have the resources to do great on standardized testing."

Increase in usage of standardized testing follows a decrease in standardized testing requirements for admission during the COVID-19 pandemic [16]. Standardized testing, such as the College Board's SAT (formerly known as the Scholastic Aptitude Test), has been at the heart of controversy for years. In 1923, Carl Brigham, the founder of the SAT, believed that "African-Americans were on the low end of the racial, ethnic, and/or cultural spectrum" and that testing showed the superiority of "the Nordic race group" [17, online]. Fast forward many years, and, while some evidence supports the notion that these tests decrease diversity [18], others provide evidence that they do not [19]. This conflicting data indicates more research is needed as related to admissions. But, more importantly, are SAT scores effective predictors of a student's college success? One study in particular noted that "much of the SAT's predictive power is found to derive from its correlation with high school demographic characteristics" [20, abstract], while other studies point to different variables predicting success such as socio-economic status and locale of primary and secondary schools (e.g., students from rural communities). Either way, this increase in usage of standardized testing comes at a time where the socio-political climate perpetuates the the lack of SATs as contributing to merit-less admissions requirements.

4.1.2   Decrease in Sense of Belonging Among Prospective Students from Minoritized Groups
Jean also recognized that the change universities make to accommodate the new laws may increase the sense of alienation minoritized high school students may feel from higher education. There is significant evidence that supports the fact that a sense of belonging plays a critical role in academic achievement [21–23]. Whether a student feels they will be comfortable being themselves on campus affects where they will apply and if they will apply at all. As Jean

said,

> We all know that inclusivity is huge. I as a recruiter have always...told my admission counselors, we create the environment long before the student gets here. ... You make them feel like they're part of the community, you include them. When they do, this is when students are recruited to your institution. They don't come here on the first year, that first tour if they're able to, especially underrepresented minority groups, they might not even tour the campus until they're there for the first day of orientation. If they don't feel that they're included, long before that, then we're looking at students really going to perhaps to institutions [that are a] bit more welcoming.

This, in combination with Jean's expectations of competition rising over high-achieving students from minoritized groups due to the impacts of the new laws, deepens the importance of an institution's outreach initiatives and information distribution systems.

4.1.3   Decrease in Awareness of Support for the Application Process
When it comes to priming students for college applications, half of the participants had no knowledge of programs their institution may or may not be engaging in to help students decide where to submit applications and which colleges or programs may provide support to students as they develop their applications. College Board's research shows that barriers students face when applying to college include procedural, cultural, geographical, informational, and financial [24]. Programs that provide support for students to overcome these barriers are important for increasing the number of students applying to postsecondary programs.

Bowie noted a program their institution engages with in partnership with FAFSA "where they...[work] at the local high schools with parents and students themselves to complete that [FAFSA] application." Bowie also noted that in the College of Engineering, their institution also has "an endowed program that really pushes to get students interested in engineering. It's more outreach, but it does lend itself to...allow students to find a pathway to the university." Jean's institution utilizes demographic information submitted through organizations like College Board to send targeted information to students from low-income families but notes that "if the student doesn't want to report this, then it's unfortunate because that could be a great barrier."

4.1.4   Decrease in Enrollment of Students from Minoritized Groups
Morgan, however, expects the cases to have far-reaching consequences for minority enrollment, stating, "Oh, I knew that the ban of affirmative action would decrease the enrollment of, particularly, Black students at predominantly White institutions." Jean's expectations were somewhat similar to Morgan's, citing their state's incentives for students to move into the workforce as a compounding factor, saying,

> We are expecting this enrollment cliff that's coming and there's already going to be a drop and a decrease in students...I also think that [here]...there's a huge push for the workforce, a lot of funding. Of course, we know that indirectly this targets underrepresented minority groups. When you're pushing them to the workforce and not to higher education or attaining college degrees, that's also going to shift who's in power. You're going to see a shift in that as well. That is, of course, going to change the student body and institutions.... we're going to see that big push going to two-year

institutions.

Previous research has shown that application rate gaps between racial and ethnic groups, especially for Hispanic students, cannot be fully explained by usual factors that seem on the surface to be rooted in academics, such as academic preparation, high school quality, or even knowledge of admissions processes [25]. Minoritized students may prioritize colleges with a larger same-race student body or a history of success for students from their high school who share their background [25], indicating that this predicted decrease in enrollment may have long-term and compounding effects on the student body.

4.1.5 Further Reflection on Admissions
Rebel noted that there are several quality options for supporting high school students in earning college credit, like dual-enrollment: "One could argue that they're already in college earlier, and then hopefully, some of those students don't feel that the transition from high school to college is one that's unattainable because, in fact, they've already begun to take college credit courses." This, however, does not account for the price of enrolling into the college course portion of the class where it may not be free for students from low-income families and the lack of access to these courses in many high schools, both of which are known barriers to many under-resourced and minoritized students enrolling in these courses [26].

4.2 Anticipated Impacts to Student Support
While it is too soon to speak of the long-term ramifications, participants were asked to share their perspectives on the changes being made in their institution's student support system as well as what support can remain in place. Results show that participants expect increase in changes to goals; decrease in offices and staff to support students; no change to tutoring and academic advising; decrease in cultural events on campus; and decrease in corporate funding to support student organizations and clubs.

4.2.1 Increase in Changes to Goals for Supporting Students
According to those interviewed, there is now a movement towards changing program goals to be compliant with the new laws. For example, Morgan noted "That word *belonging* is coming up a lot more in offices, at least the ones that are still standing that have been restructured. It seems like belonging is a term that offices are allowed to include in their name as opposed to *diversity*, and already many offices have removed or switched around the words equity and inclusion."

Karter noted that "I wouldn't say there has been any major closures or seen any offices dissolve, but it's been more just trying to find a way so that we are still providing the necessary resources and support for our students to succeed in whatever it is that they do without, I guess, really clearly naming it as *this is for a certain group*. This new legislation, it does say that we are able to provide things for underrepresented [students]. It's just how can we define the underrepresented."

Morgan noted that "My particular office['s]... mission statement is being revised by our executive director because it includes focusing on underrepresented students. Which is another word for those who are Black and Brown, those who come from minority backgrounds, those who have been historically disadvantaged. I have been told that that will have to change."

4.2.2   Decrease in Offices and Staff to Support Students

Participants noted that some offices have been closed or otherwise fundamentally changed in their goals and purpose. Francis noted that

> Well, what's most likely going to be dissolved is our multicultural center for students' equity and justice. ... I think it will likely be renamed. I think what they're going to focus on, where there used to be presentations around microaggressions and inclusive language and all these what I think were great trainings and opportunities both to faculty and staff but also students, I think they're going to be changing their focus, at least from my understanding, to other things.

Francis further noted that one of their offices "is also being dissolved and will now be around community engagement. ... We also have a [center focused on undocumented students and another center on pursuing a peaceful campus]. I don't know exactly what's happening with those two and where they're going, other than I believe all staff are being retained."

4.2.3   No Change to Tutoring and Academic Advising

Participants noted that academic supports like tutoring and academic advising were a popular response, with Bowie and Karter both mentioning tutoring centers as strong centers of student support. Karter explained, "We still have our [offices engaged in tutoring, student mentors, and other student success initiatives] and then whatever else the students may need. We have obviously for things related for– We have a [disability accommodation office]."

Bowie noted their advising system as particularly of use in supporting students, saying,

> Formally and historically in the College of Engineering, we've had faculty involved. With engineering being a professional degree, if you will, I think having our faculty jump in, not only tell a student, what's the sequence of courses to take, but actually if there's an opportunity to take an elective, they can coach them based on the student's interest....It's pretty much a one-to-one service that they provide. It's not mandatory, but those faculty that are there are always available.

Additionally, Bowie's institution provides student social workers who are "actually students ... that jump in and help find the resources so our students can get those needs met. ... [I]f you're hungry, it's really hard to study."

Francis further noted that the "hub and spoke" model of their student success centers will remain in place allowing their office to focus on the specific needs of Engineering students while remaining connected to the broader university office's resources.

4.2.4   Decrease in Cultural Events on Campus

Previous research has shown the value of students participating in cultural events as a community-building mechanism that increases students' sense of belonging in higher education spaces [27]. Given the laws, however, university-sponsored cultural celebrations there was confusion of whether or not they may or may not continue. For example, Morgan stated:

> The [event] for Black History Month, I believe we're allowed to continue with that, and we can also continue the celebration of Dr. Martin Luther King. I believe the Hispanic Heritage Festival has been protected, so that's good....

> At least student orgs are able to continue with culturally specific events, but now they're not getting that collaboration and financial support from our offices. I think they're going to be stressed out trying to plan these events all by themselves, at least if they want to do it at a high-quality level.

Given the celebrations mentioned as exempt from termination are specific cultural celebrations, time will tell if the bias towards more established celebrations like those will stand or if they too will be disallowed. It is likely that clear standards will only develop as state governments move to enforce their laws and institutions either face repercussions for being too lax in their restructuring or continue unfettered in their activities.

Major theories related to the impacts of sense of community [28], student involvement [29], sense of belonging, and the "other curriculum" [30] related to out-of-school development activities are well-rooted in academic literature and have evidence to ties student outcomes. Decreases in cultural events on campus then, by extension, may decrease students' academic achievement–particularly among students who would benefit most from these activities.

4.2.5 *Decrease in Corporate Funding to Support Student Organizations and Clubs*
Some participants perceived that student organizations and clubs are largely exempt from the DEI laws. Francis noted that "I think our student organizations were concerned but those are protected...such as our National Society of Black Engineers so there was a lot of curiosity and concern about how it was going to impact them, and we will do a lot of reassurance that it's not going to impact them." Karter reinforced this notion by stating that "I believe the College of Engineering is checking in with [student organizations] periodically just to see how things are going."

Bowie mentioned the connection of student organizations to national organizations, noting that "We have over [a few dozen] student organizations within the college itself, the College of Engineering. I want to say 90% of those are affiliated with the parent organization that exists nationally."

However, other participants had differing perspectives, with some stating that student organizations focusing on specific demographics will likely have a harder time maintaining their level of activity. Morgan noted that

> I'm the advisor for a student organization that focuses on Black student engineers, and we've already seen, sadly, less financial support from corporate sponsors whose money students rely on heavily to put on amazing events that prepare students for the professional world in engineering, as well as attend conferences ... and to give them more direct access to job opportunities because they're not able to have as high-quality of an experience in recruitment events that are open to everyone. We've gotten less corporate sponsorship in the months that have followed. We have also just learned we're going to receive less departmental funding from other engineering departments. ... They also got a notice from one of the department heads who said, *We may not be able to support you at all next year.* This really leaves students hanging.

This decrease in funding may also contribute to the loss of activities for minoritized population

groups, which again may contribute to their sense of belonging.

4.3   Anticipated Impacts on Faculty and Staff

These laws impact not only students but faculty and staff as well. Morgan noted that

> When there's a legal ban based on race or gender or sexual orientation [for students]...their concerns extend to faculty as well saying, *If there are less students enrolled of a particular racial demographic, then there's also going to be less hiring of staff and administrators because it's very logical to say, well, we don't need them because there's not enough students for them to be needed.* Then those who do end up enrolling, who do they have to turn to without fear of being discriminated against for the color of their skin?

4.3.1   Increase in Faculty and Staff Confusion and Stress

When it comes to instructions and guidance handed down from university leadership, participants tended to experience bouts of silence and statements insinuating leadership had and still may have some difficulty delineating what changes had to be made to align with new laws. Some responses indicate a degree of clarity had been met, but time will tell if these changes have met legal requirements.

Morgan emphasized this by saying:

> What I see is growing frustration and sadness. What I see is growing abandonment. That's the word that I use to describe the email that the treasurer of my student org forwarded me when they said that their departments had decreased funding [for their student org activities]....Feelings of being left in the dark, misled, especially since we have so much time to get specific information. We're now in December, the final month of 2023, and we're getting ready for the holidays, students are getting ready for final exams, and no one knows exactly what's going to happen in January 2024. That's sad to me. It's not fair either.

Karter acknowledged this as well, stating that "I would say it's still unclear mainly because it's just something that's so new. Then there are always– I don't think it was as detailed as it could, but then of course there are so many different layers in terms of what we do, what we may deem to be academic focused, or what we deem to be something that is necessary that may not fall within the guidelines." Karter further stated "I think what we were given, they have done the best that they could to provide us with as much guidance as possible. Then like I said, it seems– at this point, I don't know if anyone really knows, 100% clarity, like this is what it is, and as long as we don't do this we'll be okay."

Francis also noted that "I think everybody's been concerned and everybody's been nervous....As a Hispanic serving institution who's had a very strong diversity focus and focus on underrepresented students, particular in engineering, to all of a sudden shift gears, I think it's made all of us nervous, but we don't want to get on the wrong side of the law." Francis further asked "How do we continue to fulfill our mission as a Hispanic-serving institution within the confines of this legislation? I think, yes, it's caused angst, it's caused worry and uncertainty."

Evidence suggests that academic job satisfaction and stress decrease job performance [31, 32]. The particular stresses mentioned, including being fired or, worse, being held in contempt of the law, only add to this stress. A lack of clear direction from administration only adds to the confusion and uncertainty and may have further implications on faculty and staff recruitment and retention. It is worth noting that this confusion may have been intentionally built-in to legislation, as noted by researchers [33] studying the new Florida laws that limit DEI efforts at colleges and universities.

4.3.2   Increase in Changes to Departments/Offices, Job Titles, and Employment Roles

Participants reported varying levels of changes in their particular work, but all reported at least some language changes regarding DEI work, with others reporting changes to department restructuring, job titles, and associated job descriptions as well as office restructuring. Francis noted:

> One of the staff members that I had on my staff was [focused on] diversity and inclusion. [The employee] ran initiatives around different community conversations. [The employee was] very involved with our Society of Women Engineers, Society of Hispanic Professional Engineers, our National Society of Black Engineers. We really had to kind of rethink [the employee's] role and make it focus. One, we had to change [the employee's] title, so that got done a few months back in advance of this legislation, but also then [we had to change] the initiatives that [the employee is] running.

Jean noted that they "had to go back and really look and see how the job description reflected [the new legal requirements]. If there was anything that might say these ***three bad words***, we might lose funding, we might have to perhaps cut that team."

4.3.3   Increase in Changes to Publicly Facing Materials

Karter noted that "we had to have our website vetted. For example, we had an entire page dedicated to inclusive teaching strategies. Of course, that page would have all these words that were deemed to be inappropriate, I guess, considering the new law." Karter further noted that "We changed wording to 'underrepresented' because 'underrepresented' could mean multiple things. It could depend based on the field as well. We focused on underrepresented, low-income, or socioeconomic background, things like that. Those have been okay. That is what we have been focusing on."

4.3.4   Decrease in Staff Jobs Supporting Students

Participants did not mention any current loss of jobs in offices focused on student support that was related to diversity, equity, and inclusion. For example, Jean shared that "Everybody got to maintain the same positions with different names. Perhaps titles have changed, but we didn't let go of any positions, which is really good.... I know other institutions... that had to redistribute individuals, they had to go to different teams. Some of them did lose their jobs, so it was pretty unnerving."

Rebel lamented that:

> I think I would just be interested in understanding where will the people go that have

been hired for these DEI positions. Where will they end up and how different will their job responsibilities be? Because ideally, they were under one job description and hired under one job description with that understanding. Now, the law has basically, in effect, eliminated that position. You have some highly qualified, skilled, intelligent individuals who may be transitioning to other positions and understanding what does that mean for the work they'd done in the past, and are they protected to continue working as well, given that their position, their staff, and the current roles have been eliminated.

Morgan noted that dissolving of offices and programs had already begun. Morgan observed that

I kind of feel very insulated here in the School of Engineering, but I have heard of other DEI offices and programs that began dissolving in September. Our school year began in August, so at least that gave them some time at the start of the school year to make their announcements and make their transitions. We have a few positions open in our department, where we've already started to receive applicants who are trying to come in from other DEI offices and programs because our own department has not been dissolved, at least not as of yet.

Morgan also noted that "[W]e did have a very heated conversation in...our department-wide staff meeting...We were all clearly angry about it being December and not having as much information as we thought we would about how we are going to proceed in our roles towards students and also in our positions. Thankfully, none of us have been let go, but given the circumstances, it's pretty clear that some people will leave."

Yet, in April 2024, for example, it was reported that over 100 jobs have been cut from universities in Texas, "a hit echoed or anticipated in numerous other states where lawmakers are rolling out similar policies during an important election year" [34]. This was in reaction to pressure from legislators who felt that change had not been significant or fast enough.

4.3.5   *Decrease in Faculty and Staff Recruitment and Retention*

There is an expectation that these anticipated changes to the DEI landscape will result in lost input and/or expertise either in the form of losing current faculty or preventing potential faculty from considering working in the states where these DEI laws have been enacted. According to some participants, faculty feel frustrated and confused and are considering the viability of remaining in these institutions and regions. For example, Jean noted that ''I think we all share frustration....It could be at times defeating for individuals at work at the institution...Not being able to offer [support] to incoming students is pretty frustrating." Others are generally unaware of any major reactions among faculty, but there is no indication of a positive response in any of the institutions represented.

Changes in positions, offices, and funding may push vital faculty and staff to seek work more aligned with their specialties and/or values, especially when it comes to minoritized faculty. In particular, Rebel noted that:

I think it may affect the general pool of ethnic minorities in the field. If there's a constraint in terms of the avenues or the criteria for admissibility, if that is hampering

the number of qualified ethnic minorities that go into those particular programs of study, then it would make sense that the number of individuals graduating and seeking positions in those programs will be decreased.

One of the participants further emphasized this, stating:

For me, I have to consider not just legally as a female, but also legally as a Black person. The abortion ban, the affirmative action ban, I think that has a double hit on people like me who are Black and Brown and also female. We have a lot more to consider in terms of our career because of these laws and where we feel like we can stay where we'll be emotionally, physically and psychologically safe.

Jean was first drawn to the university because of their DEI admissions team. Jean notes that "That was probably one of the most appealing parts of going into this role because I see the need. I know we need to have diversity, and we need to definitely create a team to support those students." She further noted that, "[W]e really became nervous because some of the funding that was acquired for the assistant director, for some of the admission counselors had come with the idea of being very explicit and saying that we were going to grow, become extremely diverse, that we were on our way to wanting to be a [Hispanic Serving Institution]." Jean expressed her frustration with having her roles change due to the new laws.

Morgan poignantly aligned personal values with professional ones, noting:

One of the things I mentioned was this is one of those times where you have to ask yourself, *what are your values as a human being?*, and *do your values as a human being match the values of the places where you work?* Oftentimes, we think, *No, we got to separate work and personal matters.* Which is true, ... but there are times when the two connect and your well-being as an individual, psychologically, spiritually, emotionally, is dependent on those values matching....The most successful ones are the ones where values match.

These perspectives are backed by emerging evidence on the topic. In a recent study in Florida with 642 faculty participants, nearly 50% said they are planning to move out of Florida to find employment in another state within the next year [35]. Of these, nearly 20% have already interviewed in other states in the last two years. Likewise, a survey of 1,900 professors in Texas found similar results [36], with more than 25% saying they plan to look for positions outside of Texas.

4.3.6   *Decrease in Faculty Training for Inclusive Teaching Practices*

One participant noted that training for faculty to improve their classroom practices became more limited. Karter noted that "I'm involved in a grant. ... [T]here are certain things that we had originally put in with the grant that [were] related to faculty training that is really focused on inclusive teaching environment. For those things, we had to make some changes. Trying to find a way to still provide student support that kind of fits within the state laws has been what we've been dealing with."

5   Conclusion, Limitations, and Recommendations

Given that this study was a one-time interaction with participants transcribed by one researcher, there are limitations to this study. Interviewees may not have felt comfortable speaking on more sensitive matters that have developed as a result of the changing DEI landscape. And, with the race to make changes by specific dates, some individuals may have been too busy to contribute their unique perspectives. Furthermore, the recency of these laws may correlate to participants having limited time to develop opinions and perspectives on the matter.

Based on the study, however, the ramifications of shifting DEI landscapes are yet to be seen; however, faculty and staff are already concerned about how it will impact their students and themselves. There is still significant confusion and uncertainty regarding how to navigate the new laws, and this uncertainty will lead to differing levels of changes undertaken at individual institutions, making understanding exactly what to expect difficult if not impossible. And, while a couple of participants expressed some hope that the difficulties stemming from the new laws will force innovation, most expect things to get worse before they get better.

To continue ensuring student success and faculty/staff retention, especially in an area as prone to inequalities and unbalanced demographics as Engineering, universities need to be very intentional in outreach and support services. As Karter optimistically noted, "There have been other challenges...that have come up within the field of higher ed and then we were able to get around it. We were able to find a solution really. I think this may just be one of those that we just have to deal with and then see how things go."

Based on the responses of participants, universities may seek to increase their outreach and informational campaigns, especially in under-resourced areas and schools with high percentages of minoritized students, so students feel they have an actionable path to higher education. Universities and colleges may seek to increase mentoring opportunities for students to connect with faculty and become more acquainted with college life and the expectations of their field post-graduation. As Bowie noted previously, integrating faculty relationships within their advising system has been a great support for their engineering students, and developing positive relationships within the university system may alleviate feelings of alienation brought on by the removal of other support systems. Administrators also need to pay close attention to the needs of their underrepresented students to ensure their institutional culture is welcoming to them. They also need to ensure that they are not intentionally or unintentionally placing the burden of inclusion on minoritized faculty.

Acknowledgments

References
[1] 20-1199 Students for Fair Admissions, Inc. v. President and Fellows of Harvard College (06/29/2023), 2023.

[2] Daria Roithmayr. Deconstructing the distinction between bias and merit. *La Raza LJ*, 10:363, 1998.

[3] Marcia Synnott. *The half-opened door: Discrimination and admissions at Harvard, Yale, and Princeton, 1900-1970.* Routledge, 2017.

[4] National Center for Education Statistics. Table 216.60. number and percentage distribution of public school students, by percentage of students in school who are eligible for free or reduced-price lunch, school level, locale, and student race/ethnicity: Fall 2021, 2021. URL `https://nces.ed.gov/programs/digest/d22/tables/dt22`$_2$`16.60.asp`.

[5] JoAnn Trejo. The burden of service for faculty of color to achieve diversity and inclusion: the minority tax. *Molecular Biology of the Cell*, 31(25):2752–2754, December 2020. ISSN 1059-1524. doi: 10.1091/mbc.E20-08-0567. URL `https://www-molbiolcell-org.ezproxy.neu.edu/doi/full/10.1091/mbc.E20-08-0567`. Publisher: American Society for Cell Biology (mboc).

[6] Reginald Alleyne. Regents v bakke: Implementing pre-bakke admissions policies with post-bakke admissions procedures. *Black LJ*, 7:290, 1981.

[7] Rodney J Andrews, Scott A Imberman, and Michael F Lovenheim. Recruiting and Supporting Low-Income, High-Achieving Students at Flagship Universities.

[8] Douglas B. Downey and Dennis J. Condron. Fifty Years since the Coleman Report: Rethinking the Relationship between Schools and Inequality. *Sociology of Education*, 89(3):207–220, 2016. ISSN 0038-0407. URL `https://www.jstor.org/stable/26383007`. Publisher: [Sage Publications, Inc., American Sociological Association].

[9] Jessica S. Howell. Assessing the Impact of Eliminating Affirmative Action in Higher Education. *Journal of Labor Economics*, 28(1):113–166, January 2010. ISSN 0734-306X, 1537-5307. doi: 10.1086/648415. URL `https://www.journals.uchicago.edu/doi/10.1086/648415`.

[10] Jenna Doane and María Del Carmen Unda. Texas' declining diversity of the undergraduate class, 2015–2022: A critical policy analysis of anti-dei legislation in the 88th session of the texas state legislature. *Texas Center for Education Policy*, 2023.

[11] Toni Feder. State anti-dei laws sow uncertainty in public colleges and universities. *Physics Today*, 77(4):22–25, 2024.

[12] Rachel Barnett. Leading with meaning: Why diversity, equity, and inclusion matters in US higher education. *Perspectives in Education*, 38(2), December 2020. ISSN 02582236, 2519593X. doi: 10.18820/2519593X/pie.v38.i2.02. URL `https://journals.ufs.ac.za/index.php/pie/article/view/4521`.

[13] Johnny Saldaña. The coding manual for qualitative researchers. 2021.

[14] Dedoose. Dedoose. URL `https://dedoose.com`.

[15] David R. Thomas. A General Inductive Approach for Analyzing Qualitative Evaluation Data. *American Journal of Evaluation*, 27(2):237–246, June 2006. ISSN 1098-2140. doi: 10.1177/1098214005283748. URL `https://doi.org/10.1177/1098214005283748`. Publisher: SAGE Publications Inc.

[16] Amber Dance. Has the Pandemic Put an End to the SAT and ACT? , 2021. URL `https://www.smithsonianmag.com/innovation/has-pandemic-put-end-to-sat-act-180978167/`.

[17] J Rosales and T Walker. The racist beginnings of standardized testing— nea. *Retrieved from neaToday website: https://www. nea. org/advocating-for-change/new-fromnea/racist-beginnings-standardized-testing*, 2021.

[18] Craig Markson, Kenneth Forman, Dafny Irizarry, and Lawrence Levy. Diversity, inequity, and exclusion: How sats and other standardized tests reduce diversity in higher education. *Journal for Leadership and Instruction*, 22(1):41–46, 2023.

[19] April Bleske-Rechek and Daniel Robinson. Standardized admission tests are not biased: In fact, they're fairer than other measures. *Skeptic (Altadena, CA)*, 28(3):7–14, 2023.

[20] Jesse M Rothstein. College performance predictions and the sat. *Journal of Econometrics*, 121(1-2):297–317, 2004.

[21] Samuel D. Museus, Varaxy Yi, and Natasha Saelua. The impact of culturally engaging campus environments on sense of belonging. *The Review of Higher Education*, 40(2):187–215, 2017. URL `https://muse.jhu.edu/pub/1/article/640609/summary`. Publisher: Johns Hopkins University Press.

[22] Roy F. Baumeister and Mark R. Leary. The Need to Belong: Desire for Interpersonal Attachments as a Fundamental Human Motivation. *Psychological Bulletin*, 117(3):497–529, 1995. doi: 10.1037/0033-2909.117.3.497.

[23] Catherine Good, Aneeta Rattan, and Carol S. Dweck. Why do women opt out? Sense of belonging and women's representation in mathematics. *Journal of Personality and Social Psychology*, 102(4):700–717, 2012. ISSN 1939-1315, 0022-3514. doi: 10.1037/a0026659. URL `http://doi.apa.org/getdoi.cfm?doi=10.1037/a0026659`.

[24] Christopher Avery, Jessica S Howell, and Lindsay Page. A review of the role of college applications on students' postsecondary outcomes. research brief. *College Board*, 2014.

[25] Sandra E Black, Kalena E Cortes, and Jane Arnold Lincove. Apply yourself: Racial and ethnic differences in college application. *Education Finance and Policy*, 15(2):209–240, 2020.

[26] Jason L. Taylor. Accelerating Pathways to College: The (In)Equitable Effects of Community College Dual Credit. *Community College Review*, 43(4):355–379, October 2015. ISSN 0091-5521, 1940-2325. doi: 10.1177/0091552115594880. URL `http://journals.sagepub.com/doi/10.1177/0091552115594880`.

[27] Jared Stephenson. *Exploring the Impact of Cultural Event Attendance on Undergraduate Students' Perceived Sense of Community at a Dual-Mission University, Post COVID: A Predictive Correlational Study*. PhD thesis, 2023.

[28] David W McMillan and David M Chavis. Sense of community: A definition and theory. *Journal of community psychology*, 14(1):6–23, 1986.

[29] Alexander W Astin. Involvement the cornerstone of excellence. *Change: The Magazine of Higher Learning*, 17 (4):35–39, 1985.

[30] George D Kuh. The other curriculum: Out-of-class experiences associated with student learning and personal development. *The Journal of Higher Education*, 66(2):123–155, 1995.

[31] Sahana Achyutha and V Lakshmi Suneetha. A study on effect of job satisfaction, stress and emotional intelligence on job performance among hei faculty members. In *3rd International Conference on Reinventing Business Practices, Start-ups and Sustainability (ICRBSS 2023)*, pages 603–615. Atlantis Press, 2024.

[32] Natasha Tageja, Vijit Chaturvedi, Gurinder Singh, and Nick Petford. Job stress-performance in academia: Role of emotional intelligence & social support. In *2019 International Conference on Automation, Computational and Technology Management (ICACTM)*, pages 198–205. IEEE, 2019.

[33] Dilys Schoorman and Rosanna Gatens. Understanding florida's hb7: A policy of intimidation by confusion. *Educational Policy*, page 08959048241235405, 2024.

[34] Acacia Coronado. Texas' diversity, equity and inclusion ban has led to more than 100 job cuts at state universities. *AP News*. URL `https://apnews.com/article/dei-texas-university-job-cuts-939b334d85108e498c0f85d2ad44eb`

[35] Nancy Guan. Florida's political climate and higher education policies are discouraging faculty, 2023. URL
    https://www.wlrn.org/2023-09-13/florida-political-climate-higher-education-policies-fac

[36] William Melhado. Texas' political environment driving faculty to leave, survey finds, 2023. URL
    https://www.texastribune.org/2023/09/07/texas-higher-education-faculty-dei-tenure/.

Appendix. Interview Protocol.

- If the interviewee is engaged in Admissions or Recruiting Students:
    - Are you involved in your university's admissions process?
    - What aspects of your current application process, if any, would you say help support a diverse student body?
    - What support does your university provide to its vulnerable and or marginalized applicants?
    - In terms of fairness towards all applicants, what do you think are some of your current application process's pros and cons?
    - Are you aware of any AI tools that your school's admission process uses?
    - Does your office plan on using any AI tools in the near future?
    - If yes to any of the above questions:
    - Can you describe the AI tool(s)?
    - How are those tools assisting the process?
    - How might these tools contribute to equity or lack of equity in the process?

- If the interviewee is engaged in Student support services:
    - What is your and your office's role in supporting students?
    - How has recent legislation impacted your institution's student support environment?
    - What offices involved in student support have you seen dissolved and or created in the past year or so?
    - What are the most effective support systems or services your institution supports and what do you think makes them effective?
    - What are some support systems you feel your institution is either lacking or needs to develop further?
    - In your experience, how have students reacted to any changes in your institution's support options?
    - How have faculty and staff reacted?
    - Are you aware of any significant changes in the process and if so, what might those be?

- Affirmative Action:
    - How much do you know about the Supreme Court case that ruled affirmative action unconstitutional?
    - Before this year, what was your opinion on affirmative action and how it impacted student demographics?
    - How, if at all, has your opinion changed since hearing about the SCOTUS decision?
    - Have you seen or do you think you will see any impact of these laws on your university's student demographics?

- DEI laws:
    - Have you noticed changes made in your university due to DEI laws enacted at the state level (Clarify if necessary)?
    - Have those changes impacted you and if so how?
    - Has there been a noticeable response by staff or faculty to these changes?
    - Is there expected to be or has there been an impact on staff and faculty recruitment?
    - How do you expect DEI legislation will affect your student population if at all? Have you seen those changes start yet?

- – What impacts may disallowing DEI offices have on student life?
- – As a result of changes made to accommodate the SCOTUS decision and DEI laws, what positive outcomes, if any, have you seen develop?

- Final question: Is there anything else you would like to add on the topics of equity, the recent SCOTUS decision, and/or new laws?