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Can Higher Education Transition to Serve Diversity, Equity, Justice, and Inclusion Missions Without Sacrificing Fiscal Standing?

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ABSTRACT

There is social and collaborative value in a diverse student body, faculty, and staff. Despite this, universities are slow to establish evidence-based fiscal initiatives to increase representation and retention. We review inequitable financial practices in American higher education, including in endowments, tuition and annual giving, athletics, and research and innovation. We discuss fiscal initiatives that promote diversity, equity, justice, and inclusion (DEJI) while maintaining or increasing return on investment. Historical inequities are discussed in the context of institutional standards and methods of restructuring for DEJI success. A case-study of two Very High Research Activity Institutions in Alabama is used to demonstrate areas of improvement. Restructuring for an equitable, fiscally responsible, sustainable university system is feasible but requires changes to current standards.

Keywords: diversity, equity, inclusion; recruitment and retention; university administration; university economics; university restructuring

The present article highlights the structural inequities built into university microeconomies in the United States and considers how these institutions can revitalize diversity, equity, justice, and inclusion (DEJI) missions by restructuring these funds. Diversity is operationally defined in the present article as representation

of individuals that have been historically and/or are currently excluded in academia because of race, ethnicity, sexual orientation, gender, ability, or other identities. The positive economic impacts of increased diversity have been widely studied, and in higher education, diversity has been shown to have direct positive impacts on students, faculty, and staff. Universities rely on endowments, tuition and annual giving, athletics, and research innovations to meet their financial needs, but may not consider how the inclusion of individuals from historically/currently underrepresented identities can directly and indirectly impact university fiscal standing. This article reviews current inequities in these four subcategories of higher education funding and demonstrates how sources of university revenue can be restructured to promote diversity, generally benefit institutions, and maintain or increase return on investment and fiscal standing.

SUMMARY OF PREVIOUS LITERATURE AND DISCUSSION OF RELATIONSHIPS, GAPS AND DISAGREEMENTS

DEJI is good for economies: increasing the ethnic diversity of a metropolitan area, for example, tends to increase the wages and home values of its residents. In the United States, increasing the share of foreign-born residents by 25% maps to a 14.5% mean increase in the wages of U.S-born residents (Ottaviano & Peri, 2006); a similar relationship has been found in Europe (Bellini et al., 2013). Conversely, exclusion of diversity can stifle economic growth. Peterson and Mann (2020) estimated that between 2000-2020, racism against Black Americans – as realized through prejudicial lending, wage gaps, and segregated education – cost the U.S. economy $16 trillion in lost earnings and unrealized business revenue. They estimate that if these gaps were closed, $5 trillion would be added to the U.S. gross domestic product (GDP) in only five years (Peterson & Mann, 2020). Similarly, there is a dearth of representation in patents attributed to women and people of color. Improved access to patents across gender and racial lines is estimated to increase GDP per capita by up to 4.4% (Cook & Yang, 2017). By addressing inequity in higher education, colleges and universities can reduce persistent educational disparities, improve their own fiscal standing, and contribute positively to the American economy.

Students at more diverse schools tend to develop sharper critical thinking skills, are more at ease in multicultural milieus, and are better prepared to participate in modern, global economies (Adams & Welsch, 1995). More specifically, diversity in higher education tends to leave students with more positive attitudes towards people who are not like them (Milem, 2003). Diversity also has a positive effect on individual futures. Daniel et al. (2001) analyzed data from the National Longitudinal Survey of Youth and found that racial diversity has a positive effect on future earnings of both historically/currently excluded (HE) and non-HE groups. In a similar study, Wolfe and Fletcher (2013) analyzed data from the National Longitudinal Study of Adolescent Health and found that diversity had a significant positive effect on earnings. More concretely, increasing the diversity of an institution by one standard deviation is correlated to a 5% increase in expected earnings. This is corroborated by Orfield (2001) in which students from more diverse schools tend to go on to higher paying jobs. Conversely, a lack of diversity in higher education cultivates prejudice

(Massey, 2004). For example, White students from racially segregated schools tend to prefer and pursue same-race social networks, workplaces, and neighborhoods (Braddock & Gonzalez, 2010).

Diversity also benefits individual faculty, especially women and those from HE groups; increasing diversity reduces gendered and race-based divisions of labor, thereby increasing faculty equity (Carrigan et al., 2011; Casad et al., 2020). Faculty from HE groups also benefit from institutional diversity through more effective faculty mentoring and commonality with mentors (Campbell & Campbell, 2007). Thus, representation is especially valuable for those who make faculty diverse. It gives faculty from HE backgrounds a more equitable opportunity to be productive teachers and researchers, and of advancing in their careers at the same rate as their White male colleagues.

Diversity benefits institutions by helping them to provide higher quality instruction and mentoring services to their students and faculty. A meta-analysis by Stahl et al. (2010) found that by and large, diversity increases a group's ability to solve problems creatively. Given that much of the interworking of higher education is accomplished by collaboration, how teams function depends strongly on the diversity of the members (Cox & Blake, 2011; McLeod et al., 1996). Institutions with large employee bases also benefit from diversity initiatives directly by reducing turnover and absenteeism while introducing new viewpoints and increasing job satisfaction for HE coworkers (Cox & Blake, 1991; Seifert & Umbach, 2008). Despite these positive outcomes at institutions and universities, the implementation of diversity initiatives at Predominately White Institutions (PWIs) is slow-going in the United States.

Universities have several methods to balance their fiscal needs; however, DEJI-focused initiatives of funding agencies, changing donor demographics, and an era of racial reckoning mean that universities serve to financially benefit from implementing and improving diversity, equity, justice, and inclusion (DEJI) initiatives to an extent not currently realized. These initiatives could benefit the institution's fiscal standing, create inclusive campus cultures, and improve current recruitment and retention efforts. For example, in the United States, public funding of universities is at its lowest since 1994 and universities are compensating for that decrease with tuition hikes (Whitford, 2020). This tactic disproportionately affects students from HE backgrounds thereby decreasing the impacts of the DEJI efforts who are being made at these institutions, reducing cost-eligible student populations, and decreasing equitability on campus. As an appeal to universities, we offer a discussion of the fiscal inequities at universities and suggest avenues to balance financial needs while improving DEJI outcomes. We argue that recent social trends may allow institutions to use DEJI efforts as a focal point to reevaluate university finances and meet operational budget requirements despite expected decreases in public funding (Whitford, 2020).

In this article, we discuss four ways universities in the United States receive income as outlined by Bienen (2012). These include: 1) endowments, 2) tuition and annual giving programs, 3) athletics, and 4) research and subsequent innovation sales. We elaborate on current inequities and evidence-backed alternative fiscal practices for each income stream. We conclude with case studies of two Very High Research

Activity PWIs, Auburn University (AU) and University of Alabama (UA) between 2019-2020. In the case study, we discuss challenges to diversity, equity, justice, and inclusion at these universities as a result of current fiscal prioritization and consider future fiscal directions.

Endowments

There is significant stratification of endowments that occur across racial and socioeconomic lines. Nichols and Santos (2016) demonstrated that university endowments often serve to make high-income universities, and their affluent alumni, even wealthier. Median per student expenditures at universities with endowments over $500 million are more than 14-times those of universities with smaller endowments ($137,000 versus $9,600). Such disparities in per-student expenditures have been linked to inequalities in labor market outcomes and lifetime earnings of students (Bound & Turner, 2007). In principle, increasing the spending rate of endowments to just 5% could increase access to higher education by offsetting tuition costs for students from low-income or HE backgrounds (Nichols & Santos, 2016). The 5% standard has been encouraged since the mid-1990s (Frey, 2002). Since then, some universities that were analyzed by Nichols and Santos (2016) have set 5% as their minima while others provide a goal-range from ~3.5%-5%. With an increased endowment spending rate, returns on unrestricted funds can be directed toward DEJI-centered scholarships, campus-wide cultural competency, and mentorship programs (Waldeck, 2008).

Data from the National Association of College and University Business Officers (NACUBO) shows that the top 100 universities by endowment size averaged 54% endowment growth between 2011-2021 with an average spending rate at just 4.6% (National Association of College and University Business Officers [NACUBO], 2022). Interestingly, during this time period, the average spending rate decreased by 0.3-0.8% (from 5-5.2%) at universities with ≥$101 million endowments. Contrastingly, spending rates increased by 0.4-0.6% (to 4.1-5%) at universities with ≤$100 million (National Association of College and University Business Officers [NACUBO], 2022. High endowment schools are limiting available resources that could be used to recruit and retain students from HE backgrounds, leaving lower-endowment schools to pick up the slack at a greater proportional cost. Conti-Brown (2011) describes financial decisions which aim to preserve endowment size as a choice made to build prestige and promote competition between peer universities rather than support students from low-income and HE backgrounds. The universities that are reducing their endowment spending rate could prioritize DEJI programming by setting 5% as their minimum standard spending rate. The additional funds generated could be used to reduce tuition costs, promote a culture of inclusion on campus, and fund equity-centered programming.

Universities may refrain from endowment spending due to fears of lost status associated with slower endowment growth. However, data since 2013 demonstrate that endowment growth rate is reduced by only one year of growth after 10 years when spending is set at 4% compared to 5% rate. Nichols and Santos (2016) estimated the number of students who could be supported by financial aid at top endowment

universities if they increased their spending rates to 5%. We reviewed endowment growth at these universities for 2019-2020 using the same list originally generated by Nichols and Santos (2016). They analyzed 67 universities with >$500 million endowments, 32 with ≥5% and 35 with 2.48-4.97% spending rates, respectively. Of the 32 universities with a >5% spending rate in 2013, 24 readily reported this data in their annual 2020 fiscal reports. Within that subset, 11 had spending rates of 4-5% in 2020 and one had a <4% rate. The remaining 12 universities still report a spending rate >5%. The average percent growth (±standard deviation) in endowment for the universities with ≥5% spending rate was 76±30% while 4-5% was 85±49% (data collected from university websites). Only Yeshiva University (≥5%) reported a decrease in endowment size. University spending models typically anticipate endowment growth at ~7-8% per year (American Council on Education, 2021). This demonstrates that it is fiscally possible for universities to utilize an endowment spending rate of ≥5% while continuing to grow their endowments. Universities that commit to a >5% endowment spending rate can make funds available to recruit and retain students from historically excluded groups and demonstrate a tangible commitment to DEJI.

Frey (2002) discussed higher endowment spending rates, social and fiscal responsibility, and factors that may contribute to underspent endowments. Frey argued that endowment spending rate at or above real return (7+%) may be a more socially responsible course of action. Matching endowment spending and growth rates can promote equity by funding DEJI initiatives. In contrast, a focus on endowment growth primarily benefits administrators (Frey, 2002). For example, university presidential pay and institutional prestige are both correlated to total endowment size. At the time of Frey's analysis, a 5% spending rate was considered standard; this rate was incidentally set in 1969 by the Ford Foundation. Unfortunately, since 2002, endowment spending rates have trended down at the wealthiest universities, furthering the inequities addressed by Frey (2002). To address the historical inequalities of endowments, universities at any endowment level could set a spending minimum of 5% and use generated funds to support HE and low-income students. The universities with the largest endowments could aim to match spending and growth rates. For example, in 2013 if Harvard University had a spending rate of just 5%, the institution could have supported more than 350 additional students with financial aid (Nichols & Santos, 2016). If spending rates matched growth rates, an institution could provide even more funding to create an inclusive and diverse campus. The funds generated from the increased spending rate can be used to support evidence based DEJI best practices that meet the institutional needs. Examples of programming include focused recruitment and retention initiatives, scholarships, mentorship programs, and cultural-competency and support centers. Financial restructuring to endowments can make funds available to improve student outcomes and DEJI missions.

Tuition and Annual Giving Programs

Tuition and annual giving are inextricably combined. Tuition increases reduce enrollment, retention, and diversity (Allen & Wolniak, 2019; Hemelt & Marcotte,

2011). It is estimated that for every $100 increase in tuition cost, enrollment decreases by >0.23% and this effect strengthens at Very High Research Activity institutions (Hemelt & Marcotte, 2011). Tuition increases are also positively correlated with homogeneity on campuses and decrease the above-described positive student outcomes from diverse peer cohorts (Allen & Wolniak, 2019). Universities undermine their own efforts towards stated DEJI goals each time they raise tuition. However, despite the cited generalized and modelled metrics, studies have not parsed out how university demographics change immediately following tuition increases.

Minority-serving institutions (MSIs), which intentionally keep tuition down and avoid pricing their students out of the market, may serve as a model for reducing or maintaining tuition costs (Coupet & Barnum, 2010; Cunningham et al., 2014). Almost half of MSI-enrolled students rely on a combination of Pell grants and student loans; and, because of minimal resources, these institutions typically cannot offer significant institutional aid to their students. These institutions are valuable producers of bachelor's degree holders of color and use minimal funding to support and graduate students, a practice called graduation efficiency (John & Stage, 2014). Maintaining low tuition has allowed MSIs to continue providing higher education access to HE groups when it is not readily available at PWIs (see Boland et al., 2017 for examples of access). As PWIs receive more funding per student, utilizing MSIs as model institutions could help to optimize graduation efficiency of all students, especially those from HE backgrounds.

Although tuition hikes are often described as unavoidable, they limit access and may serve to reduce the long-term fiscal standing of a university. Cheslock and Gianneschi (2008) describe diminishing returns from tuition hikes as they reach a ceiling in student demand. The COVID-19 pandemic showed universities what this might look like. Fall undergraduate enrollment dropped nearly 8% between 2019-2021 (National Student Clearinghouse Research Center [NSCRC], 2021). Many universities offered tuition discounts for the 2020-2021 academic year with hybrid learning continuing into 2021-2022. Changes to university tuition are expected to continue long-term (McCreary, 2021). Many universities faced severe financial shortfalls during the height of the COVID-19 pandemic. The financial decisions that universities made prior to the pandemic, specifically reliance on tuition, likely contributed to these shortfalls. Tuition is an inherently enrollment-dependent revenue stream and therefore risky (Startz, 2021). However, the financial decisions and changes to strategic planning that occurred during the pandemic improved university profits in the following year. Many universities reported a higher-than-normal endowment growth rate in 2021 ($\bar{x}$=35%) as compared to the standard rate of 7-8% (National Association of College and University Business Officers [NACUBO], 2022). The change in university fiscal policies in reaction to the COVID-19 pandemic resulted in considerable growth that requires further investigation to determine how similar restructuring can be made sustainable and improve equity in higher education.

Students with merit-based and mixed loan-grant packages are more likely to graduate and monetarily give back to their alma mater in the first eight years following graduation than students who fund their education entirely with loans. This holds true even if grants/scholarships only support part of their educational cost and the remainder is funded through loans (Marr et al., 2005; Olbrecht et al., 2016). In

contrast to tuition hikes, donation initiatives before and after graduation offer an avenue through which universities can increase funds without negatively impacting DEJI outcomes. Important predictors of annual giving are post-graduation salaries and student experience (Gasman, 2010; Weerts & Ronca, 2009). Additionally, Communities of Color are more likely to give charitably than White communities; Black households give an average of 25% more than white families despite wage-gaps (Kellogg Foundation, 2012). A redesign of annual giving programming can improve the financial outcomes for these respective institutions through increased donations.

Although research has categorized likely and unlikely donors, the majority of these data do not account for alumni demographics aside from gender (see Lara & Johnson, 2014; McDearmon & Shirley, 2009 for examples). However, for both PWI and MSI institutions, changing the approach to alumni giving initiatives could provide an avenue to long-term fiscal stability and limit the need for additional tuition increases. Strategies for annual giving programs should include improving student experience for those from HE backgrounds, communication targeted toward future alumni, establishing bonds between faculty and students/alumni, and reaching out to older female alumni (Sun et al., 2007). Currently, most PWIs cannot offer an inclusive campus and campus experiences for non-White students are extremely poor (Karkouti, 2016). The student experience can be improved at these institutions by creating cultural competency and mentorship programs. Active DEJI efforts require cultural centers as well as decentralized initiatives across campus to improve overall student experience (Jones et al., 2002). With additional DEJI focus, universities can create a fiscal balance between alumni donations and tuition costs.

Under current common practice, tuition and annual giving tactics are suboptimal for the long-term fiscal health of universities and the inclusion of students from HE groups. Tuition increases are a key source of inequity in higher education, with students from historically excluded backgrounds being squeezed out of the market by the additional costs. As a more equitable alternative, increasing evidence-backed efforts toward annual giving programs can create a culture of inclusion on campus. By creating a culture of inclusion and reducing tuition costs, universities increase chances of receiving alumni donations. By following evidence-based methods for affordable tuition and successful donation programming, universities can make sound budgetary decisions with a focus on inclusion. This will have long-term impacts on student retention and graduation success.

Athletics

Athletics, especially football and basketball, can provide significant sources of income for higher education institutions in the United States, particularly those institutions with top performing sports teams. For institutions with football teams that are in the Football Bowl Subdivision of the National Collegiate Athletic Association (NCAA) Division-I, winning games increases revenue through athletic donations, enhanced academic reputation, increased number of applicants, reduced acceptance rates, and raised average incoming SAT (Scholastic Aptitude Test) scores (Anderson, 2017). Successful sports teams have a significant effect on alumni donations although

distinctions between athletic donations and academic donations are rarely accounted for (Baade & Sundberg, 1996; Baumer & Zimbalist, 2019). The phenomenon of universities seeing an increase in undergraduate applications correlated with prominent athletes and athletic programs is so common it has been dubbed the "Flutie Effect," named after a star quarterback at Boston College (McEvoy, 2006). Not only do applicant numbers increase, but sports success increases applications from students with higher SAT scores and from out-of-state (Pope & Pope, 2009). In contrast to these supportive correlations, Baumer & Zimbalist (2019) argue that limited datasets and effect sizes which positively correlate university success with their sports programs are insufficient and inconclusive at best. Successful sports programs may have the potential to provide revenue and positively affect ranking and may serve as a recruitment mechanism for students from historically excluded backgrounds, but additional data are needed to confirm these correlations.

Improved reputation, both academically and athletically, of institutions with successful athletic programs can benefit students from HE groups. Black students are more likely to be influenced in their selection of universities with successful sports programs than other students (Pope & Pope, 2009). Similarly, Black students at more selective institutions are several times more likely to earn advanced degrees (Bok et al., 1998). More selective institutions also have higher student expenditure rates (e.g., financial aid packages) which support student retention (Bound et al., 2010; Bound & Turner, 2007). Likewise, all students benefit from interacting with high-achieving peers (Sacerdote, 2001; Zimmerman, 2003; Stinebrickner & Stinebrickner, 2006). As a result, athletic programs can serve as a mechanism to recruit HE students and benefit the institutional budget – however, athletic programs do not necessarily create direct revenue and can present other significant equity challenges (Baumer & Zimbalist, 2019; NCAA, 2021a).

If not accompanied by appropriate funding of support and retention measures for students/athletes from HE backgrounds, using athletics as a recruitment mechanism can become exploitative and oppose DEJI goals. Retention of students from HE backgrounds is influenced by institutional characteristics such as racial and ethnic composition, selectivity, and geography – and selective institutions may present additional barriers to success (Lundy-Wagner et al., 2013). For example, Simiyu (2012) and Komanduri and Roebuck (2015), describe how stereotypes, both internalized and from social pressure, play significant roles in HE student-athlete success, especially at PWIs. Therefore, as an institution improves its academic and athletic reputation, it must consider how to best serve athletes as both students and employees of the university - and especially those from HE backgrounds (Horton, 2015). Campus or athletic program climate impacts student success through feelings of disrespect, perception of discrimination, and lack of diversity in leadership (Rankin et al., 2016). Students who self-identify as people of color, women, and/or LGBTQIA+ (Lesbian, Gay, Transgender, Queer/Questioning, Intersex, Asexual/Ally, and other identities) and those at smaller (NCAA Division II and III) universities were negatively impacted, both academically and athletically, by poor inclusivity climate (Rankin et al., 2016). Programs such as cultural centers on campus, mentorship programs between faculty and student-athletes, specific academic advising to monitor and improve academic success, and regular DEJI

training for coaches and staff can improve climate and subsequently student-athlete retention (Bimper, 2017; Horton, 2015; Rankin et al., 2016).

Athletics can generate significant income for universities, but this can come at the cost of exploiting students from HE backgrounds without due retention support. Demographic reports by the NCAA Southeastern Conference in 2020 showed that 56% of affiliated football players were Black. This is much greater than the general population at these universities (e.g., 5% at Auburn University, 2021). Disproportional recruitment reinforces inaccurate stereotypes of Black students having physical skills as opposed to intellectual merit (Komanduri & Roebuck, 2015; Simiyu, 2012). Of those HE individuals who are recruited and retained through graduation as athletes, few find careers in sports beyond that of high school coaching and have limited options outside of sports (Komanduri & Roebuck, 2015). One study investigated trends over a ten-year period at one NCAA Division 1 institution and found that the majority of graduates came from a single degree program which had one of the lowest minimum grade point average requirements on campus (Fountain & Finley, 2011). This is corroborated by Kulics et al. (2015) which identified social pressures toward specific degree paths for student-athletes. An article by Gilbert (2016) looked at long-term negative impacts such as exploitation through student labor, medical repercussions, and limited educational advancement and compared them to the profits made for universities from college athletics. These practices continue a method of exploitation of HE student-athletes even in light of changing compensation rules.

In the 2021 case *NCAA v. Alston*, the Supreme Court decided that limitations on educational compensation cannot be enforced by the NCAA and shortly afterward the NCAA removed additional restrictions that had barred student-athletes from remuneration through sponsorships, endorsements, and appearances (Dixon, 2021; Grasko, 2021). This has created a mechanism of compensation that universities can use to create a more equitable system for student-athletes from HE groups. With the NCAA changes, the financial benefits that are potentially reaped from successful athletic programs through donations and status can now be shared with the student-athletes who create the success. This could be achieved through the *College Athletes Bill of Rights*, which calls for medical compensation, removing barriers to transferring universities, creating an external review board, and transparency from the university on total income, athlete expectations, and time-spent per week in athletic-related activities. The *College Athletes Bill of Rights* has been introduced in the U.S. senate but not yet approved as of the writing of this article. Until this, or similar legislation, is passed universities can equitably respond to the *NCAA vs. Alston* ruling by integrating these rules at the institutional level. These policies can more equitably support student-athletes and reduce exploitative practices.

Research and Innovation

Research and innovation are the final mechanism of income emphasized in Bienen (2012). This includes federal and non-governmental funding, patents, and selling of intellectual property. DEJI initiatives are integral to research and innovation because funding sources, especially federal agencies, are emphasizing broadening

participation programming as a stipulation of awards. Universities stand to increase their success in grant funding and to improve the number and quality of patents by creating inclusive campus environments.

Institutions that actively provide research opportunities to undergraduates from HE groups increase the likelihood of recruitment and retention into STEM (science, technology, engineering, and mathematics) graduate programs. Institutions that employ STEM Intervention Programs (SIPs) aimed at recruiting undergraduate minority students can obtain funding through external sources such as corporate, state, and federal grant funding (Rincon & George-Jackson, 2014). These initiatives can create on-campus cultural change through bridge programs, residential learning communities, mentorship intervention, or a combination of these. A university must commit to these as programs rather than treating them as add-ons by committing *hard* money to the initiatives and then seeking secondary support funds through *soft* money such as federal grants or corporate campaigns (as opposed to relying entirely on grant acquisitions). Approximately one-third of SIPs receive funding from industry and over half are supported by federal grants (Rincon & George-Jackson 2014). Universities that commit to SIPs and support them internally have an opportunity to build on them financially and continue to improve DEJI programming.

Institutional diversity also increases the likelihood of receiving federal research funding (Horta et al. 2008). Funding agencies such as the National Science Foundation (NSF), United States Department of Agriculture (USDA), and National Institutes of Health (NIH) have enacted strong financial incentives to diversify the science workforce and more diverse institutions are better positioned to acquire those funds. In addition to national efforts to enhance diversity in STEM, there are opportunities for inter-institutional partnerships which enhance diversity and can provide additional sources of revenue to universities through research funding. Partnerships between HBCUs and PWIs with the goal of increasing persistence of students from HE groups have been successful (Whittaker & Montgomery, 2012). An ongoing national project between MSIs and PWIs in engineering since 2013 has resulted in multiple successful federal grants demonstrating the value of creating such collaborative programs (Connor et al., 2021). Consortiums like this can also be self-sustaining and grow to incorporate more institutions thereby building sources of research and additional start-up funding (Cullers et al., 2017). Universities stand to create new innovation outcomes and generate funding through federal grants by creating multi-university consortiums that benefit all involved.

In addition to partnerships and grant funding, including individuals from historically excluded groups as student-researchers may have long-term economic benefits. Cook (2020) describes the innovation gap as a lack of women and people of color as executives, patent-holders, and inventors and the strain this puts on the U.S. economy. This gap is correlated to degree-holder discrepancies in higher education, with science and engineering doctorates in 2014 hovering at just ~40% and ~3.5% for women and Black graduates, respectively (Cook, 2020). Based on her experiences at the Massachusetts Institute of Technology, Selvidge (2014) suggests that sexism, racism, and the financial resources required to avoid sexual harassment (e.g., changing housing situations) decrease graduation retention of women and students of color. *Hard* funding of appropriate trainings, administrative interventions, and

cultural and mentorship support programs can change campus culture and help reduce the innovation gap. As a secondary benefit, improving inclusion in STEM fields should improve student experience and subsequently increase alumni donations. This demonstrates that DEJI initiatives can serve to increase funding opportunities while also supporting students from HE backgrounds.

CASE STUDY OF TWO ALABAMA UNIVERSITIES

In this section, we illustrate what these kinds of changes might look like in two specific, real-world cases, Auburn University (AU) and the University of Alabama (UA). Data presented throughout this section were gathered from the respective university websites unless otherwise cited. These universities were selected because of author familiarity and their location in the American southeast, where the history of slavery has had the most lasting and negative impacts and may illuminate subtle but important phenomena. The case studies illustrate how similarly situated institutions can restructure current fiscal practices in favor of active recruitment of students from HE backgrounds and university-wide programming to retain students once enrolled. Although this may seem costly at first, the evidence above demonstrates that this can be a successful model. We have demonstrated how increasing endowment spending rates to provide financial aid does not necessarily reduce funds, tuition decreases can be supplemented by improved annual giving outcomes, athletics programs can be restructured to compensate student-athletes while maintaining the status of the institution, and collaborative multi-institutional research programs between MSIs and PWIs can increase federal grant funding. We emphasize ways that AU and UA can utilize these principles to create sustainable financial outcomes while increasing diversity on campus, in hopes that other institutions seek similar opportunities.

While both universities have already initiated projects like those suggested above, such as *hard* money funded DEJI initiatives and cultural centers, the literature supports additional programming for improved campus climate and graduate retention of students from HE backgrounds (Rincon & George-Jackson, 2016). The University of Alabama currently maintains a LGBTQIA+ safety center and an intercultural diversity center; Auburn University supports a cross-cultural center. However, neither university promotes decentralized cultural centers outside of these programs. In 2016, AU conducted a campus climate survey; this report showed that the climate was perceived as less effective at fostering diversity as compared to a survey taken in 2003. A replication of this survey is currently on-going in 2022. University of Alabama has not reported previous climate surveys but is set to complete one in 2022. Evaluating the university climate on an ongoing basis (i.e., annually) and providing decentralized cultural centers for specific units across these large institutions would demonstrate an improved commitment to DEJI.

Similarly, while both universities have existing mentorship programs aimed at supporting HE students, both also provide opportunity for improvement. There are nine mentorship programs at UA, but only one pairs university employees with students while the others pair student mentors and student mentees; AU has three peer-to-peer mentorship programs, and a newly-formed program pairs industry

professionals with students. Although peer mentoring can be extremely effective in providing students with a support system, student-faculty relationships especially with faculty with similar identities, may be more effective in improving campus climate and retention (Blooms & Davis, 2017). Additionally, paired mentorship programs are typically college specific and are not present in every college. This may disproportionately impact students from HE backgrounds depending on their major. Professional and industry focused degree programs (e.g., business and engineering) contain the majority of mentorship programs. Students in STEM fields, except for engineering, are less likely to have access to peer-to-peer or faculty-student mentorship programs.

Auburn University has nine college-level endowed scholarship opportunities with a focus on broadening participation, however at the time of writing they were all specific to professional degrees (e.g., nursing, pharmacy). There is not much research comparing scholarship opportunities by degree sought - however, much of the available literature on this topic focuses on professional degree paths (e.g., medicine and its subfields). Considering that mentorship and scholarship opportunities at AU are focused on professional degrees, recruitment and retention of students into basic STEM fields may be challenging. University of Alabama has predominately merit-based scholarships, which are typically awarded to privileged students (Heller, 2003). Additional funds generated by restructuring of endowments and annual giving programs could be utilized to create scholarship opportunities for students from HE backgrounds, regardless of major or high school grade point average. It is worth noting that in 2021, Auburn University committed additional funds towards needs-based and HE focused scholarships and financial aid, which may change their scholarship figures for the class of 2025 (Mealins, 2021).

Endowments

Endowments are limited in that they can be restricted by the donor to certain university projects. At AU and UA in 2020 the restricted expendable net increases were $75.9 mil and $19.4 mil, whereas the unrestricted net positions increased by only $6.7 mil and $13.3 mil, respectively. Restricted expendable net values include net appreciation of endowment funds; because these funds are restricted, they can only be used for their originally intended purpose. However, Waldeck (2008) explains that universities actually have significant say in how these funds are appropriated as part of discussions with potential donors. These additional unrestricted funds would be available to support decentralized cultural centers, faculty-student mentorship programs, and improve campus climate.

In addition to changing how endowments are allocated at the time of donation, increasing spending rates allows for additional funds for financial assistance. In 2020, scholarships and grants only constituted 2.8% and 3.4% of total operating funds at AU and UA, respectively (alumni associations provide separate funding for student scholarships that is not accounted for here). By increasing the endowment spending rate to 5%, currently 4% at AU and 4.5% at UA, these universities could increase available funds to improve graduation retention through need-based and diversity focused scholarship aid. At their current endowment sizes and respective 4-year

Alabama-resident tuition costs, AU and UA could fully support the tuition of 440 and 245 students, respectively, by setting a 5% spending rate. This aid would likely increase the number of Alabama residents attending the institutions.

Tuition and Annual Giving

Jaquette et al. (2016) and Jaquette and Curs (2015) discuss how universities in states with low university appropriations are more likely to seek out non-resident (high paying) students. This disproportionately squeezes out in-state students, especially those from low-income or historically excluded backgrounds. The Fall 2021 non-resident enrollment was 46.2%, and 42.1% for Auburn University (AU) and University of Alabama (UA), respectively. This means that nearly half of the students enrolled for the class of 2025 at these Alabama state universities are not from the state of Alabama. Disproportionate recruiting of non-resident students is undoubtedly tied to Alabama's per student education appropriations per FTE (full-time equivalent) only increasing by 6.8% since 1980 (HECA inflation adjusted; State Higher Education Finance, 2021). In the same time period, student enrollment has more than doubled at both institutions. Disproportionate recruitment has likely contributed to the university demographics (81% and 78% White at UA and AU, respectively) not being reflective of the state's population (69% White; Census QuickFacts, 2019). This leaves Alabama's high school graduates from low-income and historically excluded backgrounds seeking alternative options.

In the 2020 fiscal year, 40% of Auburn University and 47% of University of Alabama's revenue was dependent on tuition and fees. Since 2011, the cost of attendance has increased 35.66% at University of Alabama and 43.02% at Auburn University. Both universities publish high numbers of students who receive grant or scholarship aid (53.11% and 57.89% at AU and UA, respectively). However, between 2012-2020, the percentage of Pell recipients – those who display exceptional financial need as defined by the United States Department of Education – averaged 15.25% at AU and 18.9% at UA (College Tuition Compare, 2021). In comparison, 40.3% of undergraduate students were Pell-eligible across Alabama during those years (National Center for Education Statistics [NCES], 2020a). This indicates that although scholarship and grant aid are offered, there is a socioeconomic barrier at these institutions. These barriers could be reduced by increasing the amount of need-based scholarship aid through restructured finances.

Not only are scholarships and grants at these institutions not well-targeted to students in financial need, the average amount of aid received has decreased at both universities since 2011 even without accounting for inflation (College Tuition Compare, 2021). Increases in tuition without accompanying aid likely favor non-resident students to the disadvantage of resident students, especially those from HE groups. This was demonstrated during the near-doubling (43.02%) of tuition cost at AU between 2011-2021, which accompanied a 2% reduction in Black student enrollment (now just 5%). This reduction in Black enrollment occurred while overall percent enrollment increased by 19% (data analyzed from College Tuition Compare, 2021). In comparison, UA increased tuition by 8% less than AU during this period and was able to increase Latinx enrollment by 3% (now at 5%) while Black

enrollment remained steady at 11%. Before the pandemic (2018-2019), >32% of Alabama's K-12 students identified as Black and ~9% Latinx. Black, Latinx, American Indian (Indigenous), Asian, and White high school student graduation rates in the state are >87% (Alabama Department of Education; 2021; NCES, 2021b). Despite this, students from HE backgrounds from Alabama are not proportionately represented at the two focal universities. While both universities have diversity offices, the institutional fiscal choices are prioritizing tuition increases over a diverse student body.

Tuition increases without accompanying scholarship dollars can also decrease retention as student loans become barriers to graduation. According to the NCES (2021c), the Auburn University, 6-year graduation rate of HE students (Black, Indigenous, and Latinx) enrolled in the cohort of 2014 (end date: 2022) was 7.3% lower than White students. University of Alabama was 10% lower. In comparison, the two public 4-year HBCUs in the state have higher retention rates of students of color than White students (Alabama A&M University: 31.25% and Alabama State University: 7.25% higher). These HBCUs support >80% of their students with grants or scholarships and >70% are partially funded by Pell grants (College Tuition Compare, 2021). Students from HE backgrounds are being adequately supported both financially and with inclusive climate at these HBCUs and are graduating at comparable rates to their White peers. This discrepancy in graduation rates demonstrates a need for improved financial practices that support HE students at AU and UA.

Auburn University and University of Alabama have demonstrated need for improved financial practices to recruit, support, and retain HE students through tuition cost considerations. Current inequitable financial practices and significant tuition increases without accompanying financial aid serve to reduce retention as reflected in current graduation data. Changes in tuition structure are therefore a key strategy in improving retention and subsequent alumni giving.

Athletics

Demographic reports by the NCAA Southeastern Conference in 2020 showed that 56% of affiliated football players were Black (NCAA, 2021b). This is likely the case for AU and UA and illustrates the significantly greater percentage of Black students affiliated with athletics as compared to the general student body (5.3% and 11.2% at AU and UA, respectively). This suggests disproportionate recruitment of students of color, particularly Black students, for athletics rather than academics. Recruitment of students purely for athletics poses more risk to students of color as compared to their White peers. Students of color typically rely more heavily on supplemental funds from athletic scholarships. When this access is dependent on physical skills, injury or heavy course-loads can become barriers to graduation. Selecting course-loads that do not conflict with athletic schedules can lead to students pursuing low-placement rate degree programs which reduce first-year destination success (Fountain & Finley, 2011; Kulics et al., 2015). This recruitment method also contributes to inaccurate stereotypes of Black students having athletic ability rather than intellectual merit. Future programming could put equal weight on successful retention of non-athlete

students from HE backgrounds as well as supporting student-athletes academically to improve equity at AU and UA.

Depending on how universities respond, strain on HE student-athletes may be compounded by the new changes to NCAA compensation rules. These rules may put additional stress on student-athletes to perform in the classroom, in athletics, and in marketing. As an example of potential additive strain, student-athletes who receive need-based aid and choose to utilize their name, image, or likeness (NIL), risk losing this assistance if the additional income changes their needs-status. This strategy will disproportionately impact HE student-athletes who rely on multiple avenues of financial support and limit their ability to pursue external funding through sponsorships. Although additional income sponsorships may be a boon to student-athletes at first, it puts additional financial reliance on athletic success and physical condition. Both universities also state that they will offer marketing and entrepreneurship training to their student-athletes but this is in addition to their other responsibilities. The NCAA rules, if responded to appropriately, can offer a mechanism to adequately support student-athletes through scholarship and direct compensation without punitive removal of financial aid. To do so, universities may consider offering athletic scholarships that fund 4 years of education, regardless of changes to student-athlete status. Future analysis will be needed to determine the full impact of the changes to NCAA student-athlete rules on retention of students of color and their first-year destination success.

Research and Innovation

University of Alabama and Auburn University systems both rank in the top 200 U.S. universities for research and development funding (National Center for Science and Engineering Statistics [NCSES], 2021). Alabama is identified as an EPSCoR (Established Program to Stimulate Competitive Research) state by the National Science Foundation. The EPSCoR program funds K-12 STEM outreach to increase recruitment of students into STEM fields and stimulate research and development in the state (ALEPSCoR, 2021). Through EPSCoR, AU and UA can establish and fund outreach programs that improve K-12 learning outcomes and recruit students from HE backgrounds to their institutions.

As Very High Research Activity Institutions, meeting and exceeding broadening participation goals put forth by federal funding agencies is to the universities' advantage. Federal granting agencies have assigned significant resources to broadening participation; the United States Department of Agriculture recently committed $25 million towards equity in agriculture and in 2018 the National Science Foundation embedded efforts across all directorates and into the strategic plan (USDA, 2021; NSF, 2019). For these reasons, universities such as AU and UA should be highlighting broadening participation as a means to accrue more grant funding while supporting students from historically excluded backgrounds.

CONCLUSION

The four primary sources of revenue for universities—endowments and related investment funds, tuition and alumni giving, athletics, and research and innovation—require internal structural change to create equitable educational environments. We suggest that universities can create considerable long-term positive outcomes for their graduates and their financial performance by implementing strong, evidence-backed, diversity, equity, justice, and inclusion initiatives. These include i) restructuring and redistributing endowment funds to counteract tuition increases, ii) increasing in-state student recruitment, particularly of individuals from HE backgrounds, iii) developing university-wide and decentralized programming to improve belongingness of students from HE backgrounds, iv) designing research-based targeted donation requests to alumni, v) modifying athletic recruitment, compensation, and degree pressures, vi) exploring equity-forward ways of implementing the new NCAA policy changes', and vii) funding DEJI programs institutionally and through grants. This article serves as an appeal to universities to restructure their current fiscal practices to allow for improved recruitment and retention of students as well as provide a culture of inclusion for faculty and staff.

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