

## Historically Black Land-Grant Universities: Overcoming Barriers and Achieving Success

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### Executive Summary

With the passage of the Morrill Act in 1862, public institutions of higher education saw a dramatic shift in the attention directed towards non-traditional fields such as the agricultural, military, and mechanical arts. More notably, the adoption of the second Morrill Act in 1890 resulted in the establishment of legalized separate schools for Whites and African Americans paving the way for the development of 21 Historically Black Land-Grant Universities (HBLGUs). Unlike the Morrill Act of 1862 that provided funding and 30,000 acres of land in every state for Historically White Land-Grant Universities (HWLGUs, also known as 1862 Land-Grant Universities), the 1890 legislation only mandated that funding for education be distributed annually on a “just and equitable basis” as deemed by the state. Unfortunately, once they were established, HBLGUs would only receive single digit percentages of the funding provided because of how the legislation was applied and the discrimination by state and federal governments. Despite the history of the state and federal governments refusal to allocate appropriate funding, HBLGUs continue to make significant contributions in research; providing educational access for African American, low income, and first-generation students; developing graduate programs and professional schools; and continue to be the leaders in preparing and sending African American students on to terminal degrees in science, technology, engineering, agriculture, and mathematics (STEAM) disciplines. The purpose of this brief is to provide policymakers, college administrators, faculty, staff, current and prospective students with information on: 1) the policy efforts that have shaped HBLGUs over the years, 2) challenges that have plagued and still disrupt HBLGUs status in higher education, 3) the successes of HBLGUs in enrolling, retaining, and graduating African American students within STEAM degrees, and 4) recommendations for policymakers and other sources of influence to promote better support of HBLGUs.

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receiving advanced post-secondary STEM-based agricultural and life sciences degrees in Purdue University's College of Agriculture. Levon's research focuses broadly on issues of educational equity and access of underrepresented minorities with a concentration on three areas: 1) mentoring of women and underrepresented minority graduate students, 2) STEM career development of racial and ethnic minorities attending Historically Black Land-Grant Colleges and Universities, and 3) educational and professional mobility of women and underrepresented minority graduate students and faculty.

## Introduction

Prior to 1862 colleges and universities focused education on the classical education, liberal arts, and theological studies (Diner, 2013; Johnson, 1981; Mack & Stolarick, 2014). In 1857, Vermont Representative Justin Morrill proposed the Morrill Land Grant Act for the establishment of schools focused on the agriculture, military sciences, and mechanical arts disciplines. However, it wasn't until 1862 with the influence of the Civil War prompting a need for agriculture and military experience that the Morrill Act was passed and signed into law. The Morrill Act of 1862 granted 30,000 acres of land and funding to states for every representative and senator in Congress for the establishment of universities where the leading discipline was agriculture and mechanical arts (APLU, 2012). The universities under the 1862 Morrill Act subsequently became known as 1862 Land-Grant Universities. It is important to note that two historically Black colleges and universities (HBCUs) (University of Virgin Islands and University of the District of Columbia) are acknowledged as having 1862 land grant status. This is partly due to UVI and UDC being the only institutions within their geographic region that focused on the agriculture, mechanical, and military disciplines (Neyland, 1990).

When questions arose about what to do with the newly freed slaves who were in search of educational opportunities because Historically White Land Grant Universities (HWLGU) did not permit their enrollment, legislation was needed to provide an alternative solution. A requirement stating that institutions receiving federal funding could not discriminate on the basis of race, but if a institution was created within that state that allowed the attendance of African Americans then it would satisfy this requirement. In 1872, senators put forth legislation that sought to address the educational access for African Americans. After much debate, the second Morrill Act passed in 1890, which established 1890 Land-Grant Universities, also known as Historically Black Land-Grant Universities (HBLGUs) (National Research Council, 1995; Sober & Geiger, 2014). However, because two HBLGUs (University of Virgin Islands and University of the District of Columbia) also are designated under the 1862 land grant distinction we refer to 1862 land grant universities with predominantly White demographics as HWLGUs. The first HBLGU created was Alcorn State University, which opened its doors in 1871 (Lee & Keys 2013; National Research Council, 1995; Sober & Geiger, 2014). From the onset, differences existed between 1862 and 1890 legislation including the availability of 30,000 acres of land for HWLGUs that was not granted to HBLGUs (Jenkins, 1991; Sharpe, 2005; Wolanin, 1998). Additionally, funding was to be determined by the states where HBLGUs received far less than their White institution counterparts (Sharpe, 2005; Wolanin, 1998).

Since the passage of the second Morrill Act, 54 additional private and public HBCUs were created including 21 HBLGUs (Table 1). In addition to the Morrill Act, other cornerstone laws would be established that were important to the land-grant model including the Hatch Act of 1887, Smith-Lever Act of 1914, and the Food and Agriculture Act of 1977 (Table 2). The Hatch Act of 1887 authorized funds to establish agricultural research and experiment stations at land-grant colleges. The Smith-Lever Act of 1914 established funding for cooperative extension through the land-grant colleges for the development and distribution of scientific information related to agriculture, human economics, and technology to the greater community. The Food and Agriculture Act of 1977 provided a statutory formula to allocate funding from the United States Department of Agriculture (USDA) for HBLGUs. Each of these laws determined the funding HBLGUs were eligible for, the research that could be produced at HBLGUs, and the academic focus of HBLGUs (National Research Council, 1995).

HBCUs, in general, have always fought for their position in the national conversation among higher education institutions. For HBLGUs specifically, their track record across a variety of success metrics are often understudied and underreported which has led to these institutions not being recognized for all that they do in educating students, especially students of color. As such, the purpose of this research brief is to: 1) illustrate the historical and current funding trends associated with HBLGUs, 2) describe trends at HBLGUs regarding enrollment, retention and graduation rates, and research outputs, and 3) provide recommendations for policymakers, practitioners, and stakeholders to better equip the public with the knowledge and success of HBLGUs.

**Table 1. List of the Historically Black Land-Grant Universities and their Founding**

Institution	Location	Year
Alabama A&M University	Normal, AL	1875
Alcorn State University	Lorman, MS	1871
Central State University <sup>a</sup>	Wilberforce, OH	1887
Delaware State University	Dover, DE	1891
Florida A&M University	Tallahassee, FL	1887
Fort Valley State University	Fort Valley, GA	1895
Kentucky State University	Frankfort, KY	1886
Langston University	Langston, OK	1897
Lincoln University	Jefferson City, MO	1866
North Carolina A&T State University	Greensboro, NC	1891
Prairie View A&M University	Prairie View, TX	1876
South Carolina State University	Orangeburg, SC	1896
Southern University	Baton Rouge, LA	1880
Tennessee State University	Nashville, TN	1912
Tuskegee University <sup>b</sup>	Tuskegee, AL	1881
University of Arkansas at Pine Bluff	Pine Bluff, AR	1873
University of the District of Columbia <sup>d</sup>	Washington, DC	1851
University of Maryland Eastern Shore	Princess Anne, MD	1886
University of the Virgin Islands <sup>cd</sup>	St. Thomas, VI	1962
Virginia State University	Petersburg, VA	1882
West Virginia State University	Institute, WV	1891

**Note.** This list was compiled using available information from each institution's website.

<sup>a</sup>Central State University received land-grant distinction in 2014. <sup>b</sup>Tuskegee University is the only private land-grant university covered under the 1890 Morrill Act. <sup>c</sup>The University of the Virgin Islands is the only HBLGU outside the continental U.S. <sup>d</sup>The University of the District of Columbia and the University of the Virgin Islands are two HBLGUs that received 1862 distinction

**Table 2. Summary of Major Legislation Affecting Historically Black Land-Grant Colleges**

Legislation	Year	Result
First Morrill Act	1862	States provided 30,000 acres of land for each senator and representative in Congress for sale and the establishment of land-grant universities.
Second Morrill Act	1890	Forbade racial discrimination at institutions receiving funds associated with the first Morrill Act but stated a separate land-grant university for African American students satisfies the law. Land was not part of the 1890 Morrill Act.
Hatch Act	1887	Required each state to establish an experiment station to conduct research and verify experiments in agriculture. Each state received \$15,000 per year through this act.
Smith-Lever Act	1914	Provided additional funding to land-grant universities to create the Cooperative Extension Service to aid in the distribution of information related to home economics and agriculture.
Smith-Hughes Vocational Education Act	1917	Provided federal grants for vocational education in agriculture, home economics, and industrial arts.
Purnell Act	1925	Provided additional federal funding for research with emphasis on economics, home economics, and sociology.

**Note.** Other legislation has been passed affecting land-grant universities than what is shown in this table, however, those listed are the most commonly referred to in the literature. The list compiled was adapted from "Colleges of Agriculture at the land-grant universities: A profile" by National Research Council, 1995, National Academies Press, p. 3-7. Copyright 1995 by the National Academy of Sciences.

## Federal and State Funding Associated with HBLGUs

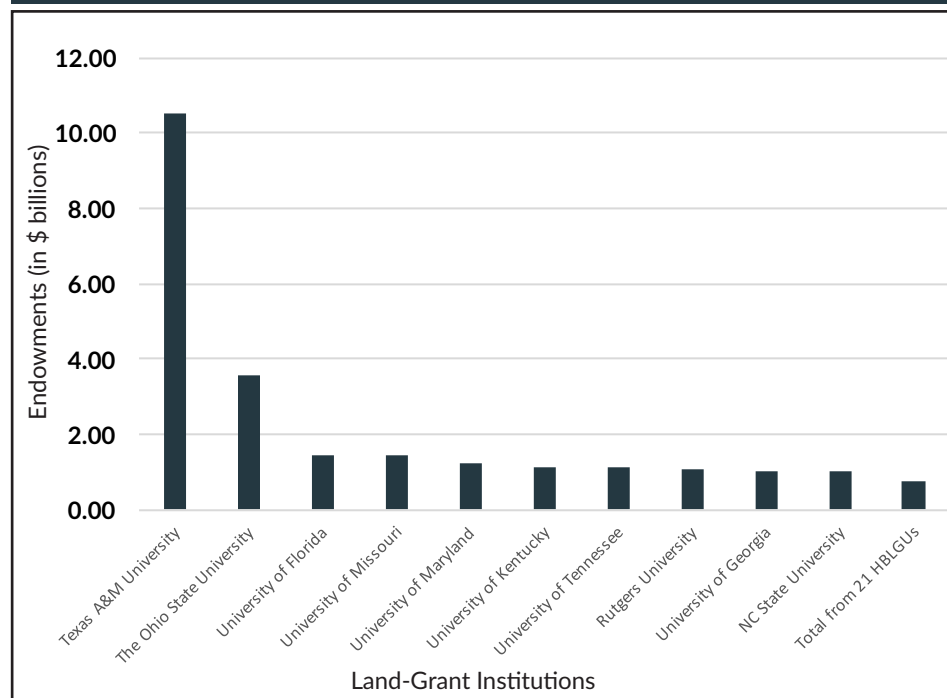
Despite legislation that awarded funding to land-grant universities in general and HBLGUs specifically, funding has consistently been applied disproportionately among HBLGUs. When the Morrill Act was signed, states oversaw the funding and was authorized to divide it between HWLGUs and HBLGUs justly and equitably. However, HBLGUs would receive only a single digit percentage of the funding allowed under the Morrill Act. Demographics in the Southern states demonstrate just how underfunded HBLGUs were in the early years of their creation. For example, in 1930 African Americans made up 23% of the population, but HBLGUs received only 6% of the funding (Wolanin, 1998). Additionally, from 1945 to 1960 HWLGUs received 99% of the total funding for organized research in the Southern Land-Grants including 100% of the federal funds for agricultural experiment stations (Huffman, 1981). It is important to note, no federal funds were available exclusively for 1890 institutions until 1967 (Tegene et al., 2002). Though HBLGUs and HWLGUs were required to work collaboratively through extension services, only HWLGUs were funded in Extension and any funding designated for HBLGUs was left in control by HWLGUs (Comer, Campbell, Edwards, & Hillison, 2006). For the first 75 years of their existence, HBLGUs received \$2.8 million annually but states ensured that HBLGUs received far less. (Comer et al., 2006).

While attempts to correct funding issues, such as the 1980 congressional authorization of \$50 million to upgrade agricultural research facilities, any attempts to rectify the funding picture of HBLGUs is far in the distance from true recovery based on current funding models (Comer et al., 2006). For example, states with land-grant universities are required to meet a one-to-one funding match that orders states “to match all formula-based funding received from federal funds on a dollar-to-dollar basis” (Lee & Keys, 2013, p. 5). From 2010 to 2012, 61% of HBLGUs did not receive one-to-one matching funds from their home states. As a result, HBLGUs lost over \$56 million including \$31.8 million in extension funding and \$24.7 million in research funding. By comparison, every state with a HWLGU has met or exceeded the one-to-one matching fund for those institutions (Comer et al., 2006; Lee Jr. & Keys, 2013). The most egregious aspect of the policy relates to when states do not meet the one-to-one matching requirement, HBLGUs are still required by the USDA to match 50% of the funds or risk losing funding. As a result, 70% of HBLGUs have asked for waivers from the USDA to avoid penalties that will cut their federal funding (Lee Jr. & Keys, 2013).

According to the American Council of Education (2014), endowments “allow an institution to make financial commitments far into the future, knowing that

resources to meet those commitments will continue to be available” (p. 2). In other words, institutional endowments help illustrate the financial picture of colleges and universities. When financial resources are scarce, institutions are unable to invest in various areas of need for their institutions. Land-grant university endowments demonstrate a financial gap between HBLGUs when compared to HWLGUs which have widened due in part to historical discriminatory funding practices (see Figure 1). The combined total endowment for all 21 HBLGUs was just over \$740 million in 2016. Of the 18 HWLGUs that share a state with one of the 21 HBLGUs, 15 had endowments larger than all 21 HBLGUs combined including 10 with endowments greater than \$1 billion. Further, the lowest endowment of an HWLGU in the South boasts an amount of just over \$500 million. By comparison, only one HBLGU has an endowment greater than \$100 million (Florida A&M University = \$113 million).

Figure 1. Endowments of 1862 Land-Grant Universities to 21 Historically Black Land-Grant Universities



**Note.** This figure was adapted from the National Association of College and University Business Officers and Commonfund Institute. (2017). U.S. and Canadian Institutions Listed by Fiscal Year 2016 Endowment Market Value and Change\* in Endowment Market Value from FY2015 to FY2016. Retrieved from <http://www.nacubo.org/Documents/EndowmentFiles/2016-Endowment-Market-Values.pdf>

## Enrollment Trends, Retention & Graduation Rates, and Research Produced at HBLGUs

Academic disciplines offered at land-grant universities tend to be the least diverse workforce areas in the U.S. For example, agriculture-related jobs such as veterinarians, farmers, environmental scientists, and other miscellaneous agriculture workers were found to be some of the Whitest jobs in America with each having at least 90% of their workforce identifying as White (Thompson, 2013). Without HBLGUs, the diversity in several workforce areas would be severely diminished in many STEAM disciplines. Despite the funding challenges, HBLGUs continue to provide educational access for all students with an emphasis on African American and low-income students, lead the nation in development and preparation of African American students at land-grant universities, and boast groundbreaking research led by some of the top African American scholars in agriculture and STEM (Jones, 2016; Redd, 1998).

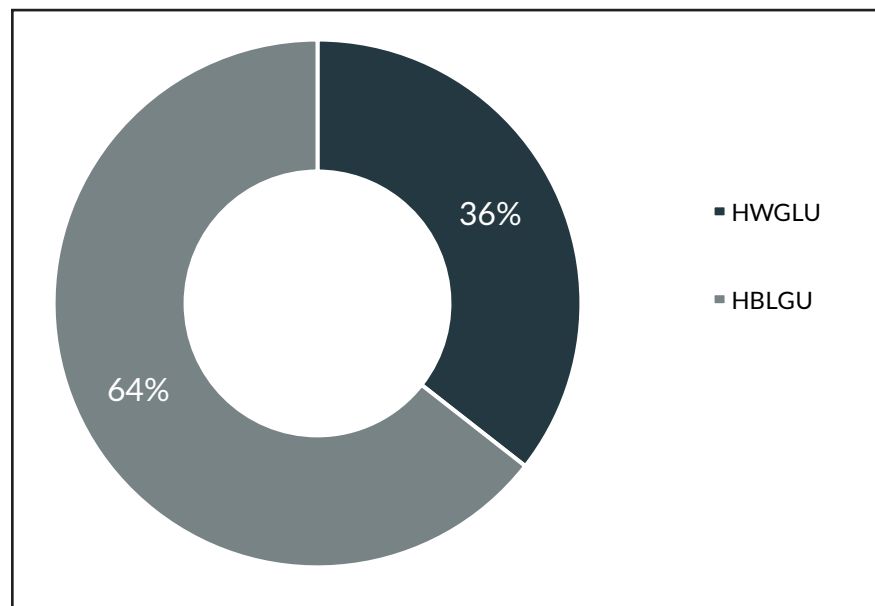
### Enrollment Trends

High enrollment of African American students is one of the most recognizable aspects of HBLGUs, especially considering that agricultural disciplines, which are foundational among land grant institutions, have historically been noted for their lack of diversity. The affinity for HBLGUs by African American students is supported by data that show 60% of African American students attending a land-grant university in the South chose HBLGUs (Figure 2). Additionally, 15 of 19 HBLGUs had a higher African American student enrollment than their same state HWGLU counterparts (excluding University of the District of Columbia and the University of the Virgin Islands who do not have an 1862 land-grant). Like traditional HBCUs, HBLGUs pride themselves on being accessible for all students, especially for African American and low socioeconomic status students. For example, HBLGUs had an average acceptance rate of 64% in 2016 and roughly 74% of all HBCU students received Pell Grant funding.

### Retention and Graduation Rates at HBLGUs

Studies suggest that the socioeconomic status of students can impact retention and graduation rates of institutions resulting in significant challenges for institutions with a high population of economically disadvantaged students (Walpole, 2003). For example, the Pell Grant is awarded to undergraduate students with low socioeconomic status to assist with tuition and other expenses. Among HBLGUs, 19 of 21 institutions had at least 50% of their undergraduate students receiving the Pell Grant award (Table 3). However, HBLGUs have demonstrated an ability to retain and graduate students despite a student's financial background.

Figure 2. Comparison of the percentage of students attending either Southern HWGLU or HBLGU



**Note.** Southern states are considered each state with a Historically Black Land-Grant University. Figure 2 was adapted using the U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), Fall Enrollment by Race/Ethnicity: Fall 2015, Undergraduate Total

For instance, 17 of the 21 HBLGUs had a full-time student retention rate at or greater than 60% (Table 4). Additionally, 11 HBLGUs were at or exceeded the national graduation rates for African American students (>35%) (U.S. Dept. of Education, 2017). As a result, HBLGUs are responsible for 60% of the degrees awarded to African Americans from land-grant universities in the Southern states (Figure 3). Further, 11 HBLGUs awarded more degrees to African American students than their same state counterparts despite differences in funding and other resources.

In fact, four HBLGUs (NC A&T, FAMU, SUBR, & AAMU) were among the top 20 institutions in the country awarding science and engineering degrees to Black graduates between 2008-2012 (Gasman & Nguyen, 2016).

**Table 3. Percent of Students Receiving Pell Grants at Historically Black Land-Grant Universities**

Institution	Percentage of Students Receiving Pell Grants
Alabama A&M University	70%
Alcorn State University	74%
Central State University	72%
Delaware State University	51%
Florida A&M University	63%
Fort Valley State University	76%
Kentucky State University	58%
Langston University	71%
Lincoln University	50%
North Carolina A&T State University	58%
Prairie View A&M University	65%
South Carolina State University	67%
Southern University and A&M College	69%
Tennessee State University	59%
Tuskegee University	24%
The University of Arkansas at Pine Bluff	70%
University of the District of Columbia	56%
University of Maryland, Eastern Shore	47%
University of the Virgin Islands	55%
Virginia State University	71%
West Virginia State University	35%

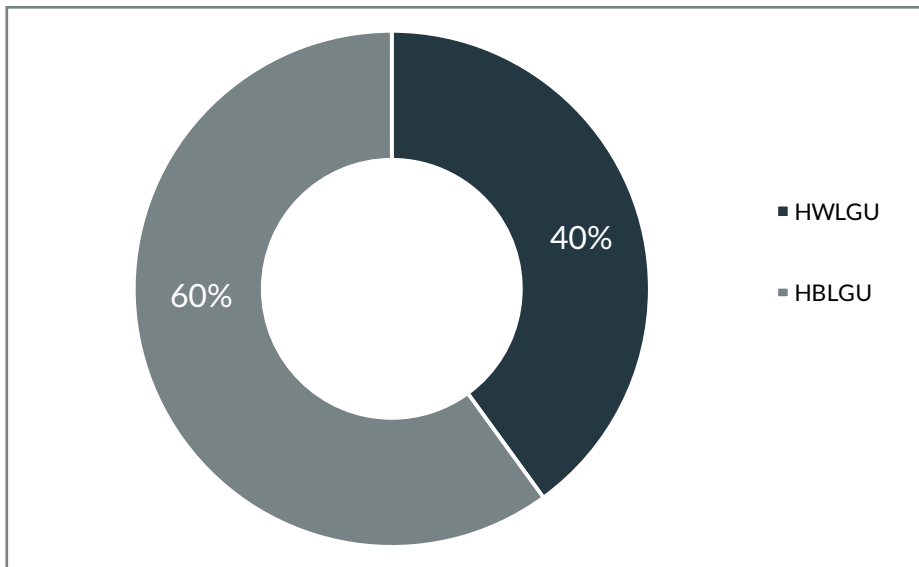
**Note.** U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), Percent of Undergraduate Students Awarded Pell Grants: 2015-16, Grand Total. (Table 3)

**Note.** Table 4 was adapted using the U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), Retention Rate & Graduation Rate by Race/Ethnicity, August 2016, African American Total

**Table 4. Full-Time Retention Rates, Six-Year Graduation Rates, and Number of Bachelor's Degrees Awarded at Historically Black Land-Grant Universities**

Institution	Full-time Student Retention Rate	6-year Graduation Rate (2008 cohort)	Bachelor's Degrees Awarded (2016)
Alabama A&M University	58%	35%	424
Alcorn State University	76%	40%	388
Central State University	54%	22%	245
Delaware State University	72%	43%	699
Florida A&M University	85%	40%	1676
Fort Valley State University	78%	32%	428
Kentucky State University	60%	20%	276
Langston University	64%	6%	234
Lincoln University	46%	25%	226
North Carolina A&T State University	75%	48%	1503
Prairie View A&M University	66%	36%	1089
South Carolina State University	57%	38%	427
Southern University and A&M College	65%	32%	610
Tennessee State University	64%	40%	925
Tuskegee University	70%	47%	454
The University of Arkansas at Pine Bluff	70%	27%	389
University of the District of Columbia	69%	15%	387
University of Maryland, Eastern Shore	68%	37%	574
University of the Virgin Islands	73%	26%	217
Virginia State University	73%	43%	856
West Virginia State University	59%	22%	416

**Figure 3. Percentage of degrees awarded to African American students from either Southern HWGLU or HBLGU**



**Note.** Southern states include any state with an Historically Black Land-Grant University. Figure 3 was adapted using the U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), Graduation Rate by Race/Ethnicity, August 2016, African American Total.

### *Research Produced at HBLGUs*

Historically and presently, HBLGUs are underfunded; yet these institutions continue to produce a significant number of scholarly outputs. Avery (2016) developed a report of the research activity being conducted at 1890 universities. Agriculture, agricultural operations, and related sciences; biological and medical sciences; computer and information sciences and support services; engineering; and mathematics and statistics are the five discipline areas highlighted in the report regarding the research being carried out at 1890 land-grant universities. Avery found that a majority of HBLGUs were developing research in crop production, plant protection, social sciences, bioinformatics, ecology, computer and information systems security, agricultural engineering, and computational mathematics to name a few. As such, the research conducted by 1890 land-grant universities has been used to address not only community-oriented problems but also issues on a national and global scale. For example, research conducted at 1890 land-grant

universities has been used to address concerns raised by the Center for Disease Control and Prevention regarding food-borne illnesses, improvement of crop production and yields, and the discovery of treatment options related to diseases that are often prevalent in the African American community including sickle cell and diabetes (Avery, 2016). Further, HBLGUs have also used their research to improve the pipeline of Black STEM graduates. For instance, Prairie View A&M University established two programs, the Premedical Concepts Institute and the Cardiovascular and Microbial Research Center, to enhance the successes of their students in STEM (Gasman, & Nguyen, 2016). Additionally, HBLGUs are home to widely recognized professional schools making an impact on the diversity of the workforce. For example, Tuskegee University established and maintained the only veterinary school at an HBLGU. As a result, nationally, more than 70% of the African American veterinarians graduate from Tuskegee's Veterinary school. This is significant considering veterinary medicine boasts a workforce that is over 95% White (Thompson, 2013).

### **Recommendations for Policymakers, Practitioners, and Stakeholders**

With the discrepancies in funding from state and federal governments, it is a testament to HBLGUs that they have been able to survive over the years. However, the success of HBLGUs despite the challenges should not be used as a mechanism to keep these institutions underfunded and/or without quality resources. While funding is one of the main issues plaguing HBLGUs, other solutions require political relationship building, state accountability measures, and performance incentives. As such, the following recommendations provide a set of viable options to improve the sustainability of HBLGUs to ensure their continued success in education and creating a diverse STEAM workforce.

1. For each state that did not establish an HBLGU under the 1862 or 1890 Morrill Land Grant Act, the federal government should designate a percentage of total land grant funding for the exclusive funding towards the 21 existing HBLGUs.

The passage of the first Morrill Act granted land and funding to HWLGUs in all 50 states with support from federal and state governments. However, the development of HBLGUs were limited to southern states, did not include land, and did not equip them with funding that matched a HWLGU. Further, while all 50 states have one HWLGU, only 18 states, the District of Columbia, and the U.S. Virgin Islands have an HBLGU. Further, state and federal governments have managed to appropriately fund HWLGUs while simultaneously not providing

equitable funding to HBLGUs. Due to the disproportionate funding mechanisms, funding that equals to the total number all HWLGUs should be granted to the 21 HBLGUs.

**2. Eliminate the requirement of 1890 land-grant university to make-up 50% of the funding when states fail to meet the one-to-one match funding.**

Currently, the USDA requires HBLGUs to come up with at least 50% of the one-to-one matching funds or risk losing federal funding when their state fails to provide 100% one-to-one matching. While HBLGUs can apply for waivers to avoid financial penalties, having the 50% requirement illustrates how policies continue to serve as a barrier to the financial health and sustainability of HBLGUs. Further, having a requirement for the institution and not the state represents a form of discrimination that polices “Black spaces” and not the actual system that is failing to meet their own regulations. A 50% requirement of institutions and not the state is unfair to HBLGUs, especially when state and federal governments have long withheld equitable funding from these institutions without any consequences.

**3. Develop an oversight committee to monitor the equitable funding practices to ensure both federal and state governments are distributing funds on a just and equitable basis.**

When the second Morrill Act was created, politicians agreed that states could be trusted to provide funding on a just and equitable basis (Wolanin, 1998). Throughout history, and as recent as 2013, evidence suggests that states continue to not distribute funding fairly to HBLGUs. To ensure that funding will be distributed on an impartial basis to HBLGUs, there needs to be a committee comprised of politicians, university presidents, and policy advocacy representatives that will serve as an oversight group and determine if states are exercising fair practices in how HBLGUs are being funded.

**4. Provide incentives to institutions that are successful in educating a high percentage of Pell Grant recipients.**

Students with economic hardships tend to come from poorer school districts, lack access to resources, and face many other burdens prior to and during their college years (Condrón & Roscigno, 2003). As such, the Pell Grant award equips students with financial assistance to help pay tuition and other fees. All but two HBLGUs had at least 50% of their undergraduates receiving Pell Grant awards demonstrating the number of low-income students reached and attending HBLGUs. Despite financial challenges and limited resources, HBLGUs continue to provide education and subsequently graduate a large proportion of economically disadvantaged students. Incentives for institutions can be delivered in the form

of additional grants for students with financial hardships; and access to exclusive funding for research with a central focus on student persistence, retention, and matriculation to graduation.

**5. Politicians should advocate for and develop strong relationships with HBLGU stakeholders including meeting with students, faculty, and administrators.**

We have seen a recent trend of politicians relying heavily on the “Black vote” to win key elections. HBCUs, in general, represent an institution where politicians can reach an educated group of African American voters. Many of the politicians utilize HBCU campuses during key election seasons only for the HBCUs to be after thoughts following their election wins. It would behoove politicians to develop authentic relationships with HBLGUs to gain a greater understanding of their needs. Authentic relationships between politicians and HBLGUs, in general, need to involve: politicians reaching out and being accessible to this stakeholder group; developing a position for HBLGU representatives to serve on state and federal political teams; invitations for key HBLGU stakeholders to attend events (i.e., fundraising banquets, campaign dinners); advocating on behalf of HBLGUs in all educational legislative sessions; and a continued relationship post-election with HBLGUs. Simply, HBLGUs need better advocates in political circles who can best articulate their successes and challenges.

## Conclusion

Though funding has been allocated towards creating sustainable land-grant universities, historically HBLGUs have often been treated unfairly with the most noteworthy injustice being little to no funding. Despite the challenges associated with a lack of equitable funding practices by federal and state governments, HBLGUs continue to provide quality education to African American and low-income students for over a century and continue to produce quality scholarship. HBLGUs enroll and graduate more African American students in the South than their HWLGU counterparts. Further, HBLGUs continue to produce research to address local, community, national, and global challenges. Without HBLGUs, much of the African American representation in various academic disciplines and workforce industries such as what currently exists in the agricultural and life sciences would be almost nonexistent. If we are to improve African American success and access to STEAM disciplines we must seek, establish, and advocate for HBLGUs as primary sources of college degree attainment.



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