

Using Research Development to Enhance Research Capacity at Four HBCUs: Results from the NORDP Consultants Program Cohort 1

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INTRODUCTION

Since 2010, a widening disparity in research and development (R&D) funding has emerged between the top 150 institutions of higher education (IHEs) by total research expenditures) and the broader cohort of IHEs, including all Historically Black Colleges and Universities (HBCUs), emerging research institutions (ERIs), and other minority-serving institutions (MSIs) (Pai, Eck, Renoe, et al., 2024). Although the top 150 IHEs have traditionally received more R&D funding from federal, state, corporate, foundation, and institutional sources for decades, the research funding gap between the top 150 IHEs and other IHEs reporting research expenditures accelerated as American Recovery and Reinvestment Act funds were exhausted. During this time, even as federally-sponsored research declined, these leading institutions continued to experience year-over-year growth in total research expenditures, primarily by increasing their institutional investments (Pai, Eck, Renoe, et al., 2024).

In contrast, HBCUs, which have faced historical inequities and contemporary constraints (Clay-Murray, 2022; McCambly & Colyvas, 2022; UNCF, 2024; Weisman, 2022), are significantly limited in their abilities to make similar investments. Thus, they face greater challenges in securing stable research funding. Importantly, these institutions typically have fewer sources of

institutional funds and smaller endowments, and they receive less facilities and administration (F&A) revenue—two critical assets that are key to expanding total research expenditures.

Endowments provide a reliable, long-term source of funding for research that is more resistant to fluctuations in external funding, including tuition, gifts, or grants (American Council on Education, 2021; Association of American Universities, 2022; Baum & Lee, 2019). Furthermore, they serve as a financial backbone for attracting senior faculty conducting pioneering research, investing in new research technologies, and maintaining essential research infrastructure such as libraries and laboratories (American Council on Education, 2021). Many IHEs with large endowments are also among the top in terms of total research expenditures. Of the 50 IHEs with the largest endowments in Fiscal Year 2023, 90% ranked in the top 150 for total research expenditures, with an average of \$11.2 billion in endowment (National Center for Education Statistics, 2024; National Center for Science and Engineering Statistics, 2022). In comparison, Howard University, the leading HBCU in terms of total research expenditures and the HBCU with the largest endowment, reported an endowment of \$926M in fiscal year 2023 (National Center for Education Statistics, 2023).

F&A revenue, generated by externally sponsored research, can be reinvested in infrastructure and administrative support for research activities (Holbrook & Sanberg, 2013). In times of economic constraint, these funds can be critical for providing seed or bridge funding for investigators, enhancing infrastructure for sponsored projects, or meeting grant matching or cost-sharing requirements. In short, higher F&A revenue significantly increases the potential for expanding research activity.

In 2022, the top 150 IHEs collected \$20.5 billion in F&A (a 56% increase from 2010); while all other IHEs collected just under \$1.7 billion (an 11% decrease from 2010) (National Center for Science and Engineering Statistics, 2022). These disparities in endowments and F&A revenue have likely contributed to the growing disparities in research portfolios during the decline in federally-sponsored research funding and beyond. To reverse this trend and make progress towards the goal of full participation in the nation's STEM research and development enterprise, a new approach is needed.

Many of the top 150 IHEs have strategically invested in research development staff, and leadership focused on growing research activity and increasing institutional competitiveness (Eck et al., 2020; Preuss, Eck, Fechner, & Walker, 2020; Preuss, Eck, Fechner, & Walker, 2019). Emerging in the early 2000s, as distinct from

often compliance-driven research administration functions, research development gained momentum as a separate function and profession in the 2010s, particularly with the establishment of the National Organization of Research Development Professionals (NORDP) (Levin, 2011). Regardless of position, most research development professionals perform activities related to finding funding opportunities, facilitating collaborations, providing proposal development support, and monitoring and utilizing metrics related to the research ecosystem (Eck & Roney, 2022). In other words, this professionalization has further supported the growth of research capacity at these leading institutions.

RESEARCH DEVELOPMENT: A STRATEGY TO GROW RESEARCH CAPACITY AT MULTIPLE LEVELS

Research development at IHEs innately takes a socio-ecological approach to understanding and navigating the complex research ecosystem. To be successful, research development considers multiple levels of influence and loci of control within the research ecosystem, each of which has a unique purpose, intent, strategy, and influence. This socio-ecological approach acknowledges that success in securing research funding can be influenced by the behaviors and practices of individual investigators, departments, schools/colleges, institutions, regions/state,

and national politics, each with its own distinct purpose, strategy, and impact. Research development works to enhance the skills, knowledge of, and resources available to individual investigators, staff, and leadership responsible for department, school, and institutional policies and procedures that impact the research ecosystem. For example, during one-on-one proposal development meetings, a research development professional will explore and coach on issues related to the funders' intent (national level), the investigator's ability to commit effort on the funded project (individual but influenced by the department, school, institutional, and national levels), and identify opportunities to disseminate scholarship resulting from the project (school, institutional, and regional levels). This multifaceted strategy bolsters individual and institutional competitiveness in securing research funding, and also contributes to the long-term growth and sustainability of the research enterprise within IHEs.

Overview of the NORDP Consultants Program

To leverage the research development expertise of its members and address this national inequity in funding, NORDP established the NORDP Consultants Program, a first-of-its-kind pilot effort to

reduce the inequities in the nation's research enterprise. This program aims to expand the national research ecosystem by providing research development services to build research capacity at HBCUs, MSIs, and ERIs. Supported by external funding, the services are provided at no cost and engage participating IHEs in several ways, with its signature model being the Cohort program. This is an intensive, two-year engagement during which expert consultants provide up to 600 hours of research development services. In this article we describe the results of Cohort 1, the pilot project, involving four HBCUs.

The logic model, as detailed in Eck (2023), includes outputs and outcomes (Table 1) designed to impact multiple levels of the research ecosystem at the participating HBCUs. These outputs and outcomes primarily target at the individual level (e.g., enhanced familiarity with sponsors) and institutional level (e.g., more efficient research administration and research development processes). Some regional outcomes (e.g., external partnerships) as well as those at the department and school levels are targeted to the extent that they influence institutional-level outcomes, which can vary by IHE.

Table 1.
Research Capacity Interventions for Cohort 1

| Target Intervention Level | Outputs | Short-Term Outcomes | Mid-Term Outcomes | Long-Term Outcomes |
|----------------------------------|---|---|---|---|
| Individual Investigators | # faculty engaged in professional development, training, technical assistance or coaching activities | Increased familiarity with sponsors Increased skills in proposal preparation Increased willingness to pursue external funding | # proposals planned # proposals submitted # awards received | Research ecosystem at HBCU partners expanded and strengthened Increased percentage of faculty from HBCUs who receive research funding Increased visibility of HBCU as a research institution Proposal success rate increased |
| Institution | # project goals identified by HBCU # objectives identified by HBCU # activities planned # activities implemented | | Improved research administration processes | |
| Region, State, and Nation | # partnerships developed | | | |

Participating Partners

Cohort 1 included:

- Florida Memorial University (FMU), (TREs 2022: None Reported): a private, primarily undergraduate coeducational, Baptist-affiliated institution located in Miami Gardens, Florida.
- Morehouse School of Medicine (MSM), (TREs 2022; \$42.5M): a doctoral/professional institution dedicated to increasing the diversity of the health professional and scientific workforce located in Atlanta, Georgia.
- North Carolina Agricultural and Technical State University (NC A&T), (TREs 2022; \$47.9M): a land-grant, doctoral research university with a national reputation in STEM education located in Greensboro, North Carolina.
- Spelman College (SC), (TREs 2022; \$2.7M): a primarily undergraduate institution and global leader in the education of women of African descent located in Atlanta, Georgia with a track record of being the top baccalaureate-origin institution of African American women who earn doctoral degrees in the science, technology, engineering, and mathematics (STEM) fields.

These institutions were named publicly as participants in Cohort 1. However, in the remainder of this paper the institutions are referred to by a randomly assigned number (HBCU 1–4) to present institutional-level results while also providing some level of confidentiality to the institutions. An engagement summary for each institution is presented below.

Program Resources and Structure

A team of NORDP consultants, all peer-evaluated experts in research development and IHE research infrastructure, were assigned to each HBCU. Each HBCU partner was able to access 600 hours of consulting time, up to \$15,000 to invest in

their research infrastructure, and support to attend the 2023 NORDP Annual Research Development Conference in Washington, DC. Each HBCU identified a lead point of contact to collaborate with the consultants in planning and implementing activities.

A timeline for the program and the process of recruiting, teaming, and matching the NORDP consultants with each other and the HBCU lead partner is described in Eck (2023). The NORDP consultants utilized a three-phase engagement framework and template that are presented in full elsewhere and summarized here (Eck, 2023):

- Phase 1 Intake: Consultants collect information and interview key stakeholders.
- Phase 2 Planning: Consultants document institutional goals for advancing the research enterprise and plan activities to achieve these goals in collaboration with the HBCU lead partner.

- Phase 3 Implementation: Consultants and the HBCU lead partner implement the planned activities.

PROGRAM EVALUATION

Research development has the potential to impact research capacity at the individual, institutional, and regional levels. Considering this, the external evaluators

conducted a program evaluation to answer the following questions that target different levels of the research ecosystem (Table 2):

Table 2. Program Evaluation Questions within Socio-Ecological Levels of the Research Ecosystem

| <i>Individual-level</i> | |
|--------------------------|--|
| | 1. To what extent have participating HBCUs shown an increased and sustained ability for faculty and researchers to compete for federal and private funding, and develop partnerships with other organizations? |
| <i>Institution-level</i> | |
| | 2. To what extent have participating HBCUs' research development and administration processes improved? |
| | 3. To what extent has the program integrated research into the learning enterprise and created an institutional climate at the participating HBCUs geared toward greater valuation and promotion of research? |
| <i>Regional-level</i> | |
| | 4. To what extent did the program influence institutional networking among the participating HBCUs and other HBCUs and non-HBCUs? |
| <i>Multiple Levels</i> | |
| | 5. To what extent have participating HBCUs built sustainable expertise in identifying appropriate funding sources and engaging with funding organizations? |

The external evaluators employed multiple data collection methods during the second year to assess overall progress and outcomes.

At the program's midpoint in March 2023, the evaluators conducted 30-minute interviews with consultants and HBCU representatives. These interviews collected in-depth qualitative information on

consultant interactions with their partnering HBCUs, progress made toward improving research development and administration within each institution, and plans for engagement for the last year of the program.

Similar 30-minute interviews were held at the program's conclusion in December 2023. These interviews focused on assessing

the changes implemented in the research development and administration processes of the HBCUs, and the extent to which the initial project goals were achieved.

Additionally, the HBCU teams provided feedback on the sustainability of the progress achieved and highlighted the consultants' efforts to provide resources that would facilitate long-term success as defined by the HBCUs.

In addition to these interviews, the evaluators collected tracking data from each consultant team. These data included information on NORDP consultant-led activities, research grants submitted and awarded, research development documents reviewed or created, and the number of institutional connections made between the participating HBCUs, the participating HBCUs and non-participating HBCUs; and the participating HBCUs and non-HBCUs.

Throughout the evaluation process, evaluators also attended monthly meetings with the NORDP consultants. These meetings provided a platform for sharing updates on each participating HBCU, consultant-led activities, and evaluation efforts. The evaluators incorporated the information captured in the monthly meeting minutes, as well as anecdotal data provided by consultants to supplement survey and program tracking data, creating a comprehensive evaluation of the program's impact.

Evaluation Findings

The results presented below are organized by institution. Each summary first details the HBCUs' research transformation vision and opportunities to address obstacles related to that vision as documented in their application. In the Phase 1 intake step, the consultants used a variety of modalities to assess how the program could support each HBCU in achieving its vision. In the Phase 2 planning step, the HBCU and consultants collaboratively defined a set of objectives, which are summarized after the application data. Finally, the summaries document the activities and outputs, detailing the approximate number of faculty, staff, and leadership engaged, key activities undertaken, the allocation of the research infrastructure funds, and the number of proposals and awards.

HBCU 1. Institution 1 engaged the NORDP consultants to (1) support its strategic pursuit of improving its Carnegie classification ranking, (2) build research development capacity to increase strategic research activity, and (3) increase interdisciplinary research across its core colleges. While the HBCU had a high number of grant-active faculty and a centralized research office with several staff responsible for pre-award and post-award administration, it was working to increase its research development capacity and to overcome several disincentives to faculty

and researchers participating in grant-seeking activities. For example, the HBCU had minimal competitive startup funds, constrained access to research resources and well-maintained research laboratory spaces, and few research support staff with the skills and expertise to support grant-seeking and post-award grant management. This institution further indicated that organizational and decision-making structures and fewer sources of internal funding limited its ability to reduce faculty

workload by providing course buyout, release time, or sabbaticals.

Through an iterative planning process with the NORDP consultants, HBCU 1 focused on expanding the knowledge, skills, and abilities of its research operations staff to better support and diminish the administrative burden to its grant-active faculty. Ultimately, HBCU 1 and its consultants outlined the following objectives:

- **Objective 1.1.** Conduct a gap analysis and develop a strategic plan to inform a sustainable staffing model needed for proposal development and other research development services to address the needs of grant-active faculty. (Institutional intervention)
- **Objective 1.2.** Provide one-on-one proposal development support and model an efficient review process to be adopted and maintained by future research development staff. (Institutional and individual interventions)
- **Objective 1.3.** Re-establish and model professional development and training opportunities for faculty and administrators to be sustained by the research development staff. (Institutional intervention)
- **Objective 1.4.** Provide training, career advancement planning, and technical assistance to both the research operations leaders and staff to build efficacy and efficiency. (Institutional intervention)
- **Objective 1.5.** Consult with early-career faculty to assess and build an individual research development strategy that guides their pursuit of current and future funding opportunities. (Individual intervention)

During the two-year engagement, consultants delivered 204 consulting hours, making progress toward most objectives by engaging 85 faculty and staff. While both

the HBCU and consultants expressed a greater desire to meet the outlined objectives, they completed the following activities:

- Reviewed 13 existing documents and produced two new policies and processes (e.g., forms, manuals, strategic plans) to build research operations efficacy and efficiency (Objective 1.4).
- Provided technical assistance to a director within research administration to support institutional planning and research management activities. (Objective 1.4).
- Implemented 60 professional development activities to grow skills to compete for federal and private funding, including a workshop series, *Building Research Culture*, and a series detailing the application process for obtaining grants. (Objective 1.3).
- Delivered nine activities specifically related to identifying appropriate funding sources. (Objective 1.5).
- Provided proposal development support for four proposals, from which total awards are still pending as of August 2024 (Objective 1.2).

While not a prioritized consulting objective, the consultants supported a larger program goal and the HBCU's goal, which was to build visibility for its research capability by supporting the development of an important partnership that resulted in an interdisciplinary award.

HBCU 2. To further enhance its interconnected teaching and research missions, HBCU 2 engaged the NORDP Consultants Program to pursue its vision of research excellence—integration across disciplines to accelerate novel discoveries and meet the demands of 21st-century teaching and learning. The institution had an established culture of rigorous academic training coupled with many opportunities for students to engage in research, as

evidenced by publications, funded grants, invited presentations, and exhibitions demonstrating its scholarly contributions to academic research. Similar to HBCU 1, faculty juggled their equally important commitments to teaching, mentoring, and advancing research and thus could benefit from increased grant support infrastructure (both personnel and financial resources) to provide the time (i.e., course releases), funding (i.e., seed funding), and administrative/technical assistance to increase the submissions of winning interdisciplinary proposals. Supported by a regional research development collaborative and shared across two central units, HBCU 2 was working to grow its internal capacity to support faculty in (1)

finding internal and external collaborators, (2) developing effective interdisciplinary teams, (3) identifying relevant funding opportunities, and (4) navigating internal processes for seeking and managing external funding. Noting differences in grant-seeking activity by discipline, HBCU 2 uniquely focused on building support for its arts and humanities faculty.

HBCU engaged the NORDP Consultants Program to support its near-

term goals of making a full inventory of its research expertise across all disciplines; developing an institution-wide research capability statement; creating a comprehensive research agenda and strategic goals for research; instituting strategies that promote and support interdisciplinary teams; and enhancing the overall research infrastructure. Those goals translated into the following objectives:

- **Objective 2.1.** Form effective interdisciplinary research teams and research interest groups to collaboratively pursue funding opportunities. (Individual intervention)
- **Objective 2.2.** Co-develop workshops and activities to increase the number of planned and submitted proposals and awards. (Individual and institutional interventions)
- **Objective 2.3.** Assess current institutional research objectives and comprehensively develop an institution-wide research agenda with strategic research goals and accompanying research capability statements. (Institutional intervention)
- **Objective 2.4.** Identify target processes and establish desired performance goals to improve research administration functions, supported by complementary centralized software. (Institutional intervention)
- **Objective 2.5.** Enhance visibility of scholarly and creative excellence by cataloging and finding new outlets to showcase faculty outputs. (Institutional intervention)

HBCU 2 and consultants met all of the designed objectives and provided more than the allotted 600 hours, concentrating on institutional planning and assessment activities to increase institutional commitments across disciplines to promote grant-seeking among faculty and invest in

centralized grant support initiatives, personnel, and infrastructure. The consultants delivered 62 technical assistance and professional development activities to faculty, staff, and institutional leadership, bolstered by efforts described below:

- Developed a web-based research hub to increase the visibility of the institution's research operations, advertise funding opportunities, facilitate faculty collaborations and student research engagement, and catalog research enterprise resources. (Objectives 2.1 and 2.5)
- Hosted workshops on topics including funding agencies and sponsors, strategic planning for research careers, and partnerships and collaboration. (Objective 2.2)
- Co-designed a new-faculty orientation to highlight the importance of engaging in research. (Objective 2.2)
- Engaged in activities to help germinate proposals, such as ideation, feedback, and/or connection to program officers for two proposals, from which \$14,050,000 was awarded as of August 2024. (Objective 2.2)
- Delivered a comprehensive research capacity report to institutional leadership that described strategies to enhance research development capabilities. (Objective 2.3)
- Increased support from institutional leadership to promote initiatives that strengthen the institution's research culture and identified long-term sustainable strategies to grow grant-seeking efforts. (Objective 2.4)
- Facilitated networking within NORDP to increase access to examples of and technical assistance for research enterprise strategies, processes, and policies. (Objective 2.4)
- Reviewed seven existing documents and produced ten research development documents (e.g., forms, manuals, strategic plans). (Objective 2.4)
- Identified and began implementing research administration software to centralize, standardize, and integrate research activity across the institution. (Objective 2.4)
- Provided professional development and training to expand knowledge of research development functions. (Objective 2.4)
- Created an online shared drive to store resources to serve as a toolbox for future infrastructure-building efforts. (Objective 2.4)
- Established two organizational partnerships and facilitated connections with 10 other IHEs. (Objective 2.5)
- Provided small stipends to incentivize faculty to work one-on-one with NORDP Consultants to develop and submit an external proposal. (Objective 2.2)
- Supported travel for three members of the research infrastructure to attend the annual conference of the National Council of University Research Administrators (NCURA). (Objective 2.4)

HBCU 3. Recognizing the need to raise both its institutional and faculty profile, HBCU 3 engaged the program to establish a research development office, the first in its history, to support and invigorate faculty enthusiasm for grant-seeking

efforts/activities. The institution was building a cultural climate that connected and rewarded grant-seeking activities and priorities for immersive and experiential learning. It envisioned a research infrastructure that integrated across its

distinct research administration and teaching functions to connect undergraduate teaching to institutional research targets. Though three newly minted senior leaders owned the research development responsibility, none had sufficient personnel to achieve all of the established goals while supporting faculty grant-writing. In plain language, each of those leaders wore many hats and bore great responsibilities that limited their capacity for one-on-one proposal development support. The new office would own the responsibility to identify grants, align internal policies to Uniform Guidance, and create opportunities to make institutional investments in research.

Further, the institution prioritized building

opportunities to increase financial investments in research and engaged the program to help renegotiate its F&A rate so that it could maximize revenue generated from external funding.

In partnership with NORDP consultants, the HBCU 3 focused on core and foundational elements necessary for its desired research infrastructure—policies that increase efficiency and compliance, generating revenue through indirect cost return for current and future investments, and providing inspiration and support to faculty who had been pursuing opportunities despite the lack of infrastructure. Ultimately, the following were prioritized for the engagement:

- **Objective 3.1.** Provide technical assistance to negotiate an indirect cost rate agreement with the institution's cognizant agency and establish a sustainable process to maintain an approved F&A rate. (Institutional intervention)
- **Objective 3.2.** Identify and recommend an enterprise software solution to manage research administration and research development functions. (Institutional intervention)
- **Objective 3.3.** Provide one-on-one proposal development support to increase the number of submitted proposals by 25%. (Individual intervention)
- **Objective 3.4.** Develop research enterprise policies and processes codified in administrative forms and standard operating procedures to support grant-seeking. (Institutional intervention)
- **Objective 3.5.** Provide and model faculty consultation services to support research career planning, including project ideation and assessing faculty goals/fit relative to current funding opportunities. (Individual and institutional interventions)

HBCU 3 met all objectives during the two-year engagement. Consultants implemented 481 activities with faculty, staff, and institutional leadership, which included 104 institutional planning and research management technical assistance activities, 55 one-on-one faculty career

planning consultations, 56 one-on-one proposal development support sessions, and 266 professional development activities to grow broad research administration and research development skills, knowledge, and abilities. The institution and its consultants successfully:

- Renegotiated the indirect cost rate with the Department of Health & Human Services (DHHS). (Objective 3.1)
- Identified and began to implement the institution's first electronic research administration system. (Objective 3.2)
- Provided one-on-one support for six proposals, from which \$2,511,969 was awarded as of August 2024. (Objective 3.3)
- Reviewed 94 existing documents and produced 28 new research development documents (e.g., forms, manuals, strategic plans). (Objective 3.4)
- Developed written policies and procedures for research operations that were submitted to the board for approval. (Objective 3.4)
- Developed a new faculty incentive package to increase overall faculty engagement in research. (Objective 3.4)
- Leveraged program funding to model faculty incentive options and delivered seven new mini-grants to faculty and supported a campus-wide research symposium to connect faculty and student research interests. (Objective 3.4)
- Supported faculty in building science communication skills to raise their faculty profile and visibility. (Objective 3.5)
- Supported faculty ideation and developed 10 research projects. (Objective 3.5)
- Created an undergraduate research program to increase student research participation. (Objective 3.5)

Toward its overall vision of raising the institutional profile, HBCU 3 and its consultants:

- Developed connections with 17 other IHEs, including the other participating HBCUs of Cohort 1, non-participating HBCUs, and non-HBCUs.
- Established 10 organizational partnerships by exploring regional connections.

HBCU 4. Research and societal impact are core to HBCU 4's mission and vision. Having made significant investments in its

research infrastructure, research performance metrics were integrated into its institutional goals and it had an

established office focused on research development. Despite having high faculty interest in grant-seeking activities and many research-active faculty, less than half of the proposals initiated were submitted to external funders. Of those submitted, the proposal win rate did not meet institutionally established performance goals. To more aggressively and effectively compete for extramural funding, HBCU 4 aimed to expand its capacity to support researchers at all levels of the institution, including faculty, trainees, and students. Noting that other institutions with similar research ambitions had more financial and personnel resources readily available, HBCU 4 had a vision to bolster its research development capacity, which was to (1) support expanding and diversifying its research portfolio, (2) provide leadership and technical assistance in planning, implementing, and evaluating activities that facilitate research across the institution, and (3) strategically advise on the development, growth, and effectiveness of the institution's research enterprise.

- **Objective 4.1.** Research and recommend enterprise research administration and research development software systems capable of integrating with existing systems that provide value and efficiency. (Institutional intervention)
- **Objective 4.2.** Assess research development gaps and build a strategic action plan to inform organizational and operational changes, to include addressing staff turnover and succession planning. (Institutional intervention)
- **Objective 4.3.** Provide one-on-one proposal development support to faculty and evaluate past performance data to explain differences between proposal initiation and

To achieve its goals and meet its pressing demand for research project ideation and one-on-one proposal development support, HBCU 4 documented needs to address high staff turnover, low morale, and overwhelmed capacity and to build access to a competitive pool of editors and grant writers. Further, the institution found that decentralized research development resources and support personnel working across several organizational units with different management expectations and operational processes resulted in unintended inefficiencies and diminished effectiveness. Finally, due in part to lacking enterprise systems for document tracking, data collection, and analysis, and reporting, HBCU 4 expressed limitations in monitoring and evaluating metrics and activity that could be used for more robust strategic planning.

With a focus on addressing efficiency, HBCU 4 and its consultants prioritized the following:

submission and systematic issues contributing to the current success rate. (Individual and institutional intervention)

- **Objective 4.4.** Train and/or mentor research development and research administration staff to advance their research development knowledge, skills, and abilities. (Individual and institutional interventions)
- **Objective 4.5.** Provide and model faculty consultations services to support research career planning, including project ideation and assessing faculty goals/fit relative to current funding opportunities. (Individual and institutional interventions).

Implementing a total of 277 activities and using more than the allotted 600 hours, HBCU 4 met all objectives during the two-year engagement. The consultants delivered two institutional planning and research management technical assistance activities, 75 one-on-one faculty career planning consultations, 127 one-on-one proposal

development support sessions, and 73 professional development activities to grow broad research administration and research development skills, knowledge, and abilities.

The institution and its consultants successfully:

- Leveraged the additional program funding to identify and began implementing an electronic research administration system to streamline processes, including pre-reviews prior to external proposal submission, internal funding competitions, bridge funding competitions, and limited submissions. (Objective 4.1)
- Reviewed 35 existing documents and produced 10 new research development documents (e.g., forms, manuals, strategic plans). (Objective 4.2)
- Supported the expansion of the research development office by recruiting the inaugural director and other personnel. (Objective 4.2)
- Provided proposal development support for 18 proposals, from which \$25,077,542 was awarded as of August 2024. (Objective 4.3)
- Hosted 73 sessions with faculty/research administrative staff members to advance their research development knowledge, skills, and abilities. (Objective 4.4)
- Provided 75 one-on-one faculty consultation services to support research career planning, including project ideation and assessing faculty goals/fit relative to current funding opportunities. (Objective 4.5)

Additionally, with the consultants, HBCU 4 developed connections with three other IHEs, including the other

participating HBCUs (Cohort 1), non-participating HBCUs, and non-HBCUs and

established four new organizational partnerships.

DISCUSSION

Given that research development is a highly context-specific activity, each institution and its supporting team designed unique objectives and pursued activities tailored to specific aspirations. Consequently, higher numbers of participants engaged, documents reviewed, or completed proposals submitted are not interpreted as better outcomes. Rather, a thematic analysis of the accomplishments provides a robust view of the program's aggregate impact across the four institutions. For these reasons, the evaluators did not utilize a traditional quantitative approach with statistical comparisons and, instead, prioritized qualitative information and univariate summaries in relation to each institution's objectives.

The results highlight the large-scale influence that research development can have on an institution and demonstrate its potential to address funding inequities directly. In just two short years, the four participating HBCUs (Cohort 1) and their NORDP consultants made significant progress on growing research capacity, paving the way for future investments. Of the 20 objectives, four focused exclusively on building individual investigator's capacity to compete for federal and private funding. Eleven objectives involved

pursuing institutional capacity to improve research development and administration processes and integrate research into the larger enterprise; and five involved working across multiple intervention levels to identify appropriate funding sources and engage with funding organizations. While no institution defined a discrete objective to intervene at the regional level, the program design and the needs of each institution pointed to the possibility of various forms of institutional networking, and in fact resulted in over 21 new connections and 14 new partnerships. Working across all levels supported increased research capacity as evidenced by updated and streamlined policies, process, and systems; new investments in the institutional offices of research; support for grant-seeking and research career planning; and follow-on proposals and awards that further create opportunities to invest in building research capacity and partnerships.

Institutional-level Change: Policies, Processes, and Systems to Protect and Increase Assets

NORDP consultants supported the four HBCUs in Cohort 1 in aligning research policies with federal regulations, thereby fostering a culture of compliance and integrity essential for sustained research activity. By reviewing policies and introducing research administration software, the program enhanced efficiency and sustainability. The regulatory

landscape governing federal research has expanded dramatically over the past decade, from 100 regulations and policies in 2014 to 215 in 2024 (Council on Governmental Relations, 2023a). Federal agencies take these regulations seriously and expect full compliance. For example, the University of California - San Diego made headlines in the spring of 2024 when the National Institutes of Health, the Office of Naval Research, and the U.S. Army began withholding all grants to the university because one scientist failed to turn in the required final reports for two sponsored projects (*Chronicle of Higher Education*, 2024). In short, a single non-compliant investigator can have an enormous impact on the institution's reputation and research activity. By reviewing 149 research administration policies and producing 50 research development products, the NORDP consultants helped the four HBCUs of Cohort 1 strengthen research compliance and integrity, creating protections for current and future investigators.

Strategic initiatives, such as renegotiating indirect cost rates, will bolster financial resources available for future research infrastructure investments. The renegotiated indirect cost rate at HBCU 3 creates a tremendous opportunity to generate critical revenue for the institution long after the program's end. For nearly a decade, the institution's expired F&A rate

resulted in a significant loss of potential revenue. At a macro-level, trends in institutional funds re-invested in the research infrastructure at IHEs follow the trend in F&A recovery; F&A recovery is an essential source of funds for most research-active institutions. When an IHE does not have a federally negotiated indirect cost rate agreement, it can use the de minimis rate (which was 10% during this engagement period), which is significantly lower than the average indirect rate for IHEs (53%–58% for organized research; Council on Governmental Relations, 2023b). For IHEs with less than \$50 million in research expenditures, the average negotiated indirect cost rate for organized research is 53.36%. Hypothetically, for an institution generating \$20 million in modified total direct cost research expenditures annually, the difference between the de minimis rate and the average rate is \$8.7 million a year. Though the de minimis rate is scheduled to be raised to 15% beginning in October 2024, it will remain significantly lower than average rates (Office of Management and Budget, 2024). Thus, over ten years, an IHE receiving the de minimis would forfeit upwards of \$80M in revenue.

Institutional-level Change: Investments in Central Research Offices for Efficiency and Expanded Effectiveness

All four HBCUs in Cohort 1 sought to establish or expand their centralized

research development capacity. Research development serves as a critical resource for researchers, faculty, staff, trainees, and students. As evidenced by activities with each institution to assess gaps, recommend best practices, and provide immediate technical assistance to meet existing demand, these near-term investments can help shape capability in the long term. For example, by building and piloting programming to support research career planning, or mentoring staff to expand their knowledge, capacity, and skills, the program helped to create an accelerated virtuous cycle for continued expansion. One HBCU lead noted, "I think it's been very impactful in the sense that we could not have done the work in the time given, and it really helped to expedite a lot of the things that we wanted to do. It made my case for it very easy because everything was backed up by data."

Relatedly, with support from consultants, HBCU 2 created a web-based research hub: a one-stop shop for the research ecosystem that will help to elevate the importance of research at the institution, advertise funding opportunities, facilitate faculty collaborations, continue to offer guidance and resources for research activities, and even connect students with

faculty who have mutual research interests. The hub includes an online shared drive with a toolbox for future efforts in building its infrastructure. These resources include guides for grant-writing, a broader impacts toolkit, and sample proposals. An output like this institutionalizes the research development strategy and builds sustainable momentum.

Individual-level Changes: Training and One-on-One Support for a Grant-Seeking Culture

All consultants provided individual proposal development support and training. Importantly, the four HBCUs from Cohort 1 and their consultants connected their one-on-one support to the needs of the community without discounting real barriers to engaging in grant-seeking activities. As well-documented in each application, high teaching loads and service obligations created time constraints for most faculty. Recognizing that the consultants were experiencing challenges in increasing faculty engagement, at least one HBCU from Cohort 1 opted to use program funds to motivate and incentivize participation in grant-seeking activities with the consultants. When asked about the impact of the pilot, the lead from HBCU 3 shared the transformational nature of the consultants' work for faculty:

As a [institution] with limited research support infrastructure, [we] faced significant challenges in developing a robust grant writing program. The burden of high teaching loads further hindered faculty from pursuing research

funding opportunities. The introduction of two expert consultants from [the pilot] was a game-changer. These consultants provided comprehensive grant writing assistance and essential grantsmanship training, significantly elevating our institution's capacity to submit high-quality, competitive grant proposals. As a result, there was a notable increase in faculty engagement in grant writing activities, directly contributing to their academic growth and relevance. This initiative not only improved our grant writing capabilities but also fostered a renewed enthusiasm for research among faculty members, transforming the research culture at [our institution]. The initiative led to a 26% increase in sponsored program funding compared to the previous year, highlighting the significant impact of targeted financial support and strategic investment in faculty-led research projects.

Multi-level Changes: Support for Awards that Build Research Capacity and Partnerships

Several awards resulting from proposals that were supported in various ways by the NORDP consultants, from funding opportunity identification to one-on-one coaching, to review and editing, demonstrate how the participating HBCUs in Cohort 1 will continue to invest in research capacity and expand partnerships.

Through the National Science Foundation's Enabling Partnerships to Increase Innovation Capacity (EPIIC), FMU joined with 3 other HBCUs (Coppin State University, Kentucky State University, and Harris-Stowe State University) to create the Historically Black College & University Alliance for Strategic Partnerships for Innovation and Research Enhancement (HBCU-ASPIRE) initiative and secure funding from NSF. HBCU-ASPIRE aims to address and overcome existing infrastructural impediments that hinder

research and innovation, and to fortify the research and innovation proficiencies of the collaborating institutions. The HBCU-ASPIRE initiative will perform a methodical analysis of the prevailing challenges impeding research and innovation within each participating HBCU and then invest in aspects of the research infrastructure, such as the Office of Sponsored Research, faculty support and training, and pre- and post-research award management systems.

With funding through the National Institutes of Health's Artificial Intelligence/Machine Learning Consortium to Advance Health Equity and Researcher Diversity (AIM-AHEAD) program, FMU will work with the University of Miami's Institute for Data Science and Computing to train 40 faculty members and students to use artificial intelligence and machine-learning techniques in their clinical practice, research, and curriculum. With new skills, faculty anticipate pursuing new funding opportunities from NIH and the AIM-

AHEAD network. Further, this award connects FMU to regional partners in Florida and to the national AIM-AHEAD program. The training program will allow FMU researchers to build critical connections with the University of Miami, several of whom support the AIM-AHEAD Infrastructure Core, and faculty from Miami-Dade College, and positions FMU as a part of the National AI Initiative.

Lessons Learned

Several key lessons emerged from this pilot project. First, research development is a time-intensive activity. Though the consultants brought added support, in some ways it increased short-term constraints for those most intimately involved. For example, the program partners with one primary point of contact, who in addition to fulfilling their day-to-day obligations, facilitates nearly all activities with the consultants from developing the engagement plan, to organizing training workshops, to recruiting faculty for one-on-one coaching and research trajectory planning.

As the fulcrum, the HBCU lead partner dedicated a lot of time and effort to engaging in the program. Thus, the program's success or failure is largely dependent on the working relationship between the lead and the consultants. In at least one instance, failure to adequately build and maintain this relationship resulted in a limited opportunity for

effectiveness. Upon evaluation, the lead emphasized the importance of having the consultants build rapport based on an appreciation for the institution's history and organizational structure. Future iterations of this program include equity-minded enhancements for consultant onboarding and a stipend and peer mentor for the lead. These additions are designed to increase rapport between the consultants and lead and support the individual who often bears a lot of responsibility and wears many hats. While a stipend does not eliminate all of the burden of the program, it at least acknowledges and compensates the lead's contribution of time and effort to the program's success. Further, the peer mentor provides a safe place for support and encouragement.

The second lesson of this pilot demonstrated that it is unlikely that a four-institution cohort will maintain the same lead contacts for the duration of program participation. One or more lead contacts will likely change due to a wide variety of personal, professional, and institutional reasons. To that end, additional transition support is provided by the program when the lead contact changes. Importantly, the consultants, where appropriate and permissible, help support the institution through leadership changes.

Third, providing highly customized services to institutions and sometimes individuals was foundational to the

program. There is no one-size-fits-all approach that will work for all institutions. Even though several institutions identified similar challenges, the approach to addressing them was different and informed by institutional culture, structure, and existing policies, processes, and practices, as well as the resources available. This intensive cohort model approach allowed for a level of customization that is not always available through alternative ways of providing research development, such as large workshop venues.

CONCLUSION

This initiative underscores the pivotal role of research development in nurturing sustainable research ecosystems across diverse institutional settings. Though all four institutions participating in the pilot (Cohort 1) were HBCUs, each had different research visions, performance expectations, and established infrastructures, yet all benefited from capacity to strategically grow their research development functions. By engaging individuals across multiple layers that influence research activity, the program is poised to challenge funding inequities. Summarizing the impact of the program, one HBCU shared, “We have increased our knowledge about research development and all of the different activities that are part of that, as well as strategies that we could implement so that we could have a more robust [research development] support.” Thus, the project

demonstrated that research development can build sustainable research capacity at institutions with varied missions and research priorities. Over the next several years, we will monitor publicly reported indicators of research activity to track progress on overall goals. Moreover, it may be an effective intervention to grow and expand the national research ecosystem.

Undoubtedly, the pilot phase of the NORDP Consultants Program enhanced institutional capacity and addressed facilitators of funding inequities within a short timeframe. This program evaluation demonstrates positive progress toward multiple program goals across several levels of the research ecosystem simultaneously. Notably, progress was made on all program targets. Across the HBCUs in Cohort 1, the NORDP consultants engaged more than 900 faculty and staff, strengthened the research infrastructure (including process, policies, and systems) at each institution, and provided proposal development support (including activities such as ideation, connection to program officers, assessment of fit, and editing and/or review) for 30 proposals. As of August 2024, nine proposals were awarded, securing a total of \$41.2 million, representing more than 100x return on investment when dividing external funding secured by programmatic funding. These awards represent one tangible measure of progress. However, there will be additive and quantifiable

outcomes as the generated F&A, coupled with strong policies and processes are used to re-invest in the research infrastructure and sustain this short-term investment.

MSI partners in Cohort 1 will continue to be invited to participate in activities organized by the NORDP Consultants Program, including quarterly networking and professional development activities, the annual meeting, and special events. Cohort 1 partners were featured in the first Annual NORDP Consultants Program hosted and MC'd by FMU in Miami Gardens, FL. Other Cohort 1 partners have served as peer coaches for Cohort 2 and on the NORDP Consultants Program Advisory Board.

Since the pilot project, the NORDP Consultants Program has grown significantly. The program has recruited a

pool of 26 approved NORDP consultants in addition to peer mentors and budget specialists and supports 172 IHEs, 72 of which are MSIs, including 33 HBCUs. All supported institutions are ERIs. These IHEs span 44 U.S. states and territories, including Alaska, Hawai'i, the U.S. Virgin Islands, and Puerto Rico. NORDP is eager to continue expanding the program by securing additional funding to provide consulting and research development capacity-building support to other MSIs. The full impact of the program will become increasingly evident over time as the knowledge, skills, and operations are implemented across each participating institution.

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