The HBCU/MSI Research Summit: Building Relationships and Exploring the Process of Inter-Institutional Partnership Between a PWI and HBCUs and MSIs

Yousef Jalali, Virginia Tech

Yousef Jalali is a Ph.D. candidate in the Department of Engineering Education at Virginia Tech. He received a B.S. and M.S. in Chemical Engineering and M.Eng. in Energy Systems Engineering. His research interests include interaction between critical thinking, imagination, and ethical reasoning, interpersonal and interinstitutional collaboration, diversity, equity, and inclusion, systems thinking, and chemical engineering learning systems. Yousef taught chemical engineering courses for a few years in his home country, Iran, and first-year engineering courses for several semesters at Virginia Tech. He has provided service and leadership in different capacities at Lehigh University and Virginia Tech.

Dr. Shernita Lee, Virginia Tech

Dr. Shernita Lee is the Assistant Dean and Director of the Graduate School's Office of Recruitment, Diversity, and Inclusion at Virginia Tech. She holds a BS in mathematics from Alabama State University and a PhD from Virginia Tech in genetics, bioinformatics, and computational biology. Lee is passionate about creating a diverse and inclusive environment for graduate students, improving graduate student retention, aiding in the navigation of challenges graduate students encounter, and directing students to university/departmental resources and allies to help them successfully complete their degree.

Dr. Justin Grimes, Virginia Tech

Dr. Justin Grimes currently serves as Assistant Director for the Office of Recruitment, Diversity, and Inclusion for the Graduate School at Virginia Polytechnic Institute and State University. Dr. Grimes research interests include the marginalization and socialization of black doctoral students in Graduate programs, motivation of Black men to pursue doctorates in education, mentorship within Student Affairs for Black Student Affairs Professionals, and the barriers and pathways to success for low-income, first-generation college students in the Southern United States.

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1. Introduction

The HBCU/MSI Research Summit is a collaborative effort initiated in 2016 to facilitate inter-institutional partnerships between Virginia Tech, a Predominantly White Institution (PWI), and Historically Black Colleges and Universities (HBCUs) and other Minority-Serving Institutions (MSIs). Each year, students and faculty from HBCUs and MSIs are invited to Virginia Tech for a two-day program. The major objectives of the summit is to: 1) develop on-campus opportunities for visiting undergraduate and master's students to learn about advanced degree programs and research opportunities; 2) facilitate in-person interaction among faculty to build relationships and explore potential opportunities to initiate and foster collaborations; and 3) to facilitate discussion about shared degree programs and inter-institutional agreements. As part of the initiative, the program offers several workshops for students to attend and provides a unique context for faculty to engage in discussion on partnerships and explore research and teaching opportunities. Starting in 2018, the program organizers built on the previous efforts and initiated a research study to better understand participants' experiences at the program, evaluate its effectiveness, and explore the factors influencing the creation and persistence of inter-institutional partnerships.

In this paper, we discuss the program as a model for facilitating inter-institutional partnership and some preliminary results that capture the impact of the program with the focus on students' engagement and recruitment. In what follows, we elaborate on the importance of broadening participation, as one of the major objectives of the program. Then, we present the background and major elements of the summit. Next, we briefly describe the 2018 HBCU/MSI Research Summit, outline the details of our evaluation strategies and present the results for the year 2018. Finally, we reflect on our experience and provide some initial recommendations that can inform the development of similar programs at other institutions.

2. Broadening participation

Inter-institutional collaborations are centered on students and/or faculty, and they often aim to develop educational and research opportunities such as students exchange and transfer, access to resources, and joint grant proposals and publications. One of the motivations for developing inter-institutional partnerships is to create access for students to consider pursuing graduate degree programs. PWIs, in general, offer programs at the graduate level that may not be available at some of the minority-serving institutions; they also provide more funding and institutional resources (Upton & Tanenbaum, 2014). Nevertheless, diversifying higher education institutions may also lead to enhanced learning experiences and additional professional development opportunities for different groups of students.

There is no doubt about underlying social issues as a contributing factor; students' access to pursue graduate degrees at PWIs is connected with broader historical and cultural challenges. Beyond diversifying the campus populations, there is a need to make a deliberate effort to provide a supportive and inclusive atmosphere for HBCU/MSI graduates who pursue graduate degrees at PWIs. Although there have been attempts to address the issue of underrepresentation of different groups including Blacks, Hispanics, and Native Americans, the overall enrollment trends are not promising. Among 3 million students enrolled in graduate programs in Fall 2018, Black students represented 12%, Hispanic students represented 10%, and American Indian/Alaska Native represented about 0.2% of the total number of students, while White students represented 53% of the total enrollment (Hussar et al. 2020). At the same time, it appears that HBCUs contribute higher graduation rates of Black students, while only accounting for 4% of all U.S. colleges and universities (Knight et al. 2014; Moore et al. 2018). According to Moore et al. (2018), research opportunities centered on collaboration and access is a reminder that, "Researchers at PWIs have a responsibility to collaborate with stakeholders affiliated with HBCUs and collectively develop viable research agendas that not only illuminate narratives situated in the HBCU experience, but also engage those stakeholders in empowering opportunities that promote their voices (p. 31)".

There have been some initiatives concerned with broadening participation of underrepresented groups. One such effort is the partnership between Vanderbilt University and Fisk University, the Fisk-Vanderbilt Masters-to-PhD Bridge Program (Stassun et al. 2010). Students accepted in this program have access to additional coursework and/or research experience and instructional opportunities at both institutions. They also interact with faculty and receive deliberate support and mentorship. The program focuses on preparing students for Ph.D. studies. Another initiative is the Leadership Alliance, a more comprehensive program that involves more than 30 institutions of different types (Ghee et al. 2014). One of the key aspects of this consortium is 8-10 weeks of summer research experience. Students from member MSIs accepted for the experience in a research institution carry out a research project, receive mentorship, and gain research and professional skills. These programs and other similar ones have the potential to build capacity for the transformation of higher education and the workforce. Similarly, the HBCU/MSI Research Summit has the potential for broadening participation by creating a context in which initial encounters-- between students, and students and faculty-- may lead to research opportunities for undergraduate students, increasing the number of HBCU/MSI master and PhD recipients, and fostering interactions and engagement for both HBCU/MSI students and Virginia Tech students in each other's institutions.

3. The HBCU/MSI Research Summit
The HBCU/MSI Research Summit involves Virginia Tech faculty and faculty/students from HBCUs/MSIs. The organizers recognize the value of student success, achievement, and voices of colleagues and students from HBCUs/MSIs brought to higher education (Moore et al. 2018). In order to accomplish such collaboration, the summit is organized by the Graduate School. This

entity is essential to not only the goals of the summit but also student support once HBCU/MSI students enroll at the PWI. At the institutional level, it is also important to have "buy-in" from other entities beyond the Graduate School that manages and organizes this event. To ensure an equal opportunity for all campus partners to be involved, invitations are sent to the Dean of each College and Director of each Research Institute. This yielded a financial commitment from the Office of the President, Office of the Provost, Office of Inclusion and Diversity, Office for Research and Innovation, and the Institute for Critical Technology and Applied Science (ICTAS). Without the financial and representative support from others, the HBCU/MSI Research Summit would not have the same impact, size, or experience for its participants. The summit is highlighted in three sections to describe the planning team, invitation process, and the structure.

3.1. The planning team
As previously mentioned, to execute the summit at this scale it is important to involve others from the Colleges to participate in the invitation process; otherwise, the summit participants are heavily skewed to participation with certain units. A minimum of one to two representatives are desired from each unit to ensure invitations are distributed to faculty members at the local level. These representatives attend several planning meetings prior to the summit and are responsible for 1) information distribution, 2) organization of the unit's efforts, and 3) management of faculty and students customized schedules. To help others gain awareness of the appropriate contacts, this information is also included on a website.

3.2. Invitations for the HBCU/MSI Research Summit
The invitation process (see Figure1), showcases the method which is based on active roles of the planning team. Each step has a check and balance to make sure the invitee (HBCU/MSI) has confirmation from the host, Virginia Tech. The first wave of invitations is through the HBCU/MSI faculty confirmation process shown in Figure 1. The Virginia Tech faculty member sends an invitation survey to a pre-existing or new partner of interest from an HBCU or MSI. This predicates if the HBCU/MSI students are able to participate in the summit since confirmation of an affiliated HBCU/MSI faculty member is required to join the summit. The Graduate School monitors both the HBCU/MSI faculty and student registrations to be certain of an identifiable Virginia Tech faculty host along with organized housing and meal accommodations for all participants.

3.3. Structure of the HBCU/MSI Research Summit
The structure of the summit is on the basis of the interpretation of the experiences of its participants. Each component in the schedule has a purpose and targeted audience to meet the objectives of the initiative. The listing of all events is provided in Table 1.
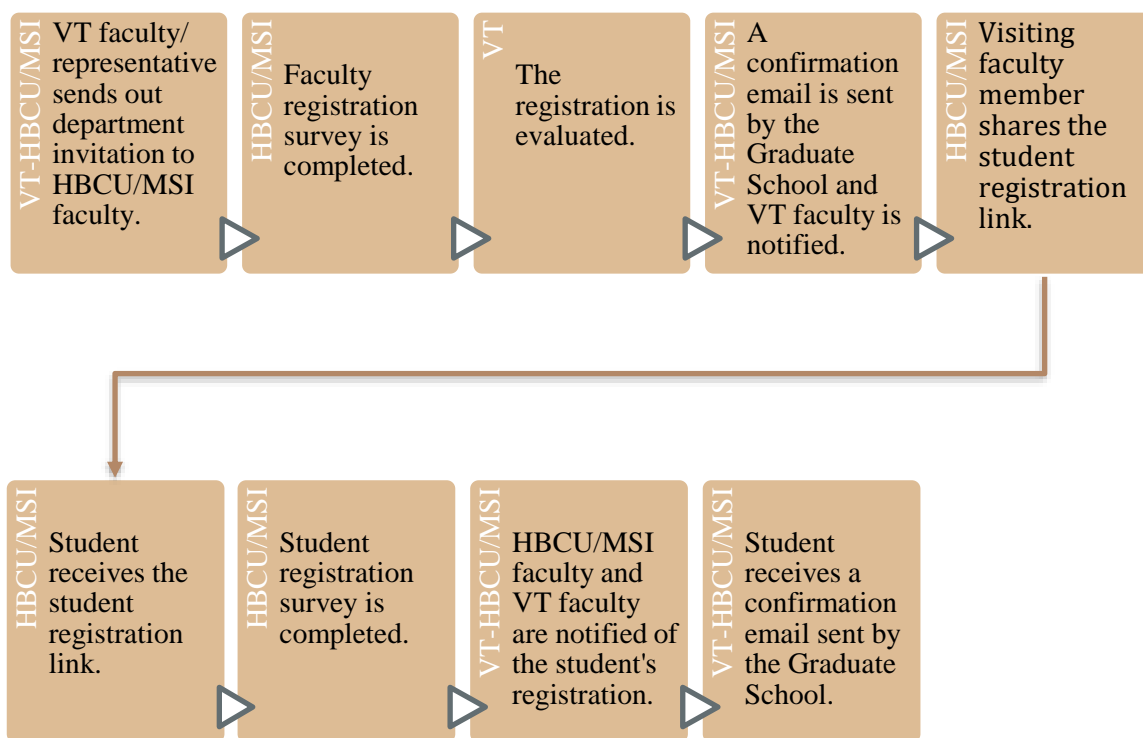
Figure 1. Steps in the confirmation process for HBCU/MSI faculty and students to participate in the HBCU/MSI Research Summit at Virginia Tech (VT)

The beginning of the two-day event starts with a poster session from the faculty and graduate students of Virginia Tech. The poster session has participants from multiple fields including chemistry, geosciences, physics, civil and environmental engineering, agriculture, leadership and community education, material sciences and engineering, aerospace engineering, industrial and systems engineering, and landscape architecture. These poster sessions allow for intimate dialogue around research and experiences at the PWI between participants.

To expand discussions between the HBCU/MSI and Virginia Tech participants, a panel showcases a group of individuals to present their experience related to research. The student panel is highly popular in filling the meeting space with HBCU/MSI students interested in learning more about the PWI experience. The guided questions set the stage for the audience to ask particular questions to the panelists. The panel is intentionally comprised of Virginia Tech graduate students at different educational levels, from several HBCU/MSI institutions, and a variety of fields of study. Similarly, the faculty panel provides space for the HBCU/MSI/PWI faculty to describe collaborative research efforts to yield grants, publications, and formal/informal agreements. To support the concept of the summit requiring commitment from both the PWI and the HBCU/MSI, we invite two keynote speakers who are also program participants. One speaker is from Virginia Tech and one is from a HBCU/MSI and both are tasked to share their story, research background, and general advice to the audience. In addition, the participants meet the Deans and other university leaders to reiterate the purpose of the

summit. The dinner allows for networking and discussions among the participants, and other members of the Virginia Tech community.

Admissions is a key part of the HBCU/MSI students' decision on if Virginia Tech is an ideal institution for their graduate school experience. Hearing the details of the application components, best practices, and that the PWI offers holistic admissions, creates an atmosphere of excitement and confidence for students to consider applying to the PWI. Providing an intimate opportunity for the HBCU/MSI students (undergraduate or master's level students) to interact with the Virginia Tech faculty, staff, and students is priceless. The HBCU/MSI students can physically visit research spaces, hear from graduate students, observe research resources, and imagine their experience if they decide to attend Virginia Tech for their graduate education.

Table 1. Description of the HBCU/MSI Research Summit's schedule, the purpose, the time allotted, and the audience of each event

Schedule	Time allotted	Purpose	Audience
Graduate student research poster session	2 hours	Showcase the breadth of graduate-level research topics offered at Virginia Tech	HBCU/MSI students, Virginia Tech graduate students
HBCU/MSI alumni student panel	1 hour	Current Virginia Tech graduate students discuss their experiences and transition to the PWI	HBCU/MSI faculty and students, Virginia Tech graduate students
Faculty diversity inter-institutional poster session	2 hours	Virginia Tech faculty members share details about their collaborative research experiences with HBCU/MSI faculty members	HBCU/MSI faculty, Virginia Tech faculty
Faculty panel: Inter-institutional partnership-establishing a memorandum of understanding (MOU)	1 hour	Define collaborative agreements types and where to begin discussions to yield MOUs.	HBCU/MSI faculty, Virginia Tech faculty
Networking dinner	2 hours	Interactive space with HBCU/MSI/PWI faculty and students	HBCU/MSI faculty and students, Virginia Tech faculty and students
Breakfast and graduate school admissions workshop	1 hour	Share information about the graduate admissions process at Virginia Tech followed by a question and answer period	HBCU/MSI faculty and students
Customized itineraries developed by the colleges/departments	5 hours	HBCU/MSI faculty and students visit with departments to gain more information about research, resources, and collaboration opportunities	HBCU/MSI faculty and students, Virginia Tech faculty and students

4. The 2018 HBCU/MSI Research Summit

In 2018, the initiative was centered on "building partnerships to establish, expand, and improve research initiatives, resources accessibility, and inclusion efforts." A total of 178 persons attended the program representing 17 institutions from eight different states and Washington D.C. Table 2 presents the list of the institutions, including fifteen HBCUs, one Hispanic-Serving Institution (HSI), and one Predominantly Black Institution (PBI). The number of faculty and students, and major host units at Virginia Tech are presented in Table 3. Considering the number of the guests in different disciplines, the summit is geared mostly to engineering and science. One noticeable outcome of the summit in 2018 was the enrollment of two HBCU/MSI student participants into graduate programs at Virginia Tech.

Table 2. The HBCU/MSI Research Summit Partner Institutions in 2018

Institution	State	Type
Alabama Agricultural & Mechanical University	Alabama	HBCU
Delaware State University	Delaware	HBCU
Edward Waters College	Florida	HBCU
Fayetteville State University	North Carolina	HBCU
Fisk University	Tennessee	HBCU
Florida International University	Florida	HSI
Georgia State University	Georgia	PBI
Hampton University	Virginia	HBCU
Howard University	Washington, D.C.	HBCU
Johnson C. Smith University	North Carolina	HBCU
Morehouse College	Georgia	HBCU
Morgan State University	Maryland	HBCU
North Carolina Agricultural & Technical State University	North Carolina	HBCU
Tennessee State University	Tennessee	HBCU
University of Maryland Eastern Shore	Maryland	HBCU
Virginia State University	Virginia	HBCU
Winston-Salem State University	North Carolina	HBCU

4.1. Program evaluation method

As discussed in the Introduction section, we initiated a study to explore participants' experiences in the program and track the outcomes of the program, both for students and faculty. This study has been approved by the Institutional Review Board at Virginia Tech. The major means for data collection includes a post-program survey and individual virtual interviews. All participants receive an invitation to complete the post-program survey. To better track the impact of the program, we include a question to identify those who are interested in participating in an interview. Among different groups of participants in the year of 2018, we were only able to interview HBCU/MSI faculty who expressed interest.

Table 3. Number of HBCU/MSI faculty and students and their host's major units

Major units	Faculty	Students (undergraduate and graduate)	Total
College of Agriculture and Life Sciences	11	16	27
College of Architecture and Urban Studies	1	4	5
College of Liberal Arts and Human Sciences	7	7	14
College of Engineering	8	15	23
College of Science	7	16	23
College of Veterinary Medicine	3	7	10
ICTAS	18	46	64
Pamplin College of Business	5	7	12

We have continued the same procedure in 2019 with two major changes. One of the changes was a follow-up survey developed and incorporated in the study to take a step towards exploring factors that influence the existence and persistence of collaborative relationships among collaborative teams across institutions. HBCU/MSI faculty and Virginia Tech faculty received an invitation to complete the follow-up survey. Also, in addition to the faculty participants, we conducted interviews with HBCU/MSI students. As of fall 2020, we are still in the process of collecting data for the year 2019.

4.1.1 Post-program survey

At the beginning of the program, participants were made aware of the opportunity to participate in the summit research study. Within a week after the program, students and faculty received an invitation email asking for their participation in the study. The survey questions included Likert scale, multiple choice and open-ended questions; participants were asked about their overall evaluation of the program, the extent by which they were satisfied with different activities, and thoughts on ways to improve the summit. We also included specific questions for different groups of students and faculty from HBCUs, MSIs, and Virginia Tech. Sample questions are included in Table 4.

Table 4. Post-program survey sample questions

Group	Sample question
General	Please indicate how satisfied or dissatisfied you are with the different activities during the research summit?
HBCU/MSI undergraduate students	How has the summit influenced your thoughts about going to graduate school?
Faculty	What outcomes would you think your inter-institutional collaboration will produce (please select all that apply)?

A total of 95 participants (36%) completed the survey. The percentage of participants from the host institution and HBCUs/MSIs who responded were very close to the average rate of 36% (HBCUs/MSIs: 65 participants, Virginia Tech: 30 participants). In this paper, we focus on experiences of the students and the influence of the program on students' desire to pursue graduate degrees. A total of 33 HBCU/MSI students (28%) completed the survey, including 27 undergraduate and 6 graduate students. It is worth noting that a majority of the students who participated in the summit were at the undergraduate level. A numbers of statements were provided to capture an overall picture of their evaluation of the summit. On a Likert scale ranging from "Strongly agree" to "Strongly disagree," the students indicated the extent of their agreement with the statements. The summary results for undergraduate students' evaluation are provided in Table 5. The majority held positive opinion (agree or strongly agree) about these statements (from 74 to 88%).

We also asked students to reflect on specific activities during the event. Table 6 provides a summary of the undergraduate students' evaluation of different parts of the program on a Likert scale ranging from "Very satisfied" to "Very dissatisfied". The majority of respondents who evaluated their experiences were either very satisfied or somewhat satisfied with different activities (from 83 to 90%). The six graduate students who completed the survey similarly indicated overall positive opinion about different elements and activities of the summit. The responses from both student populations yielded valuable insight into ways the summit can be improved along with what aspects of the event should remain unchanged. Recognition of the varied motivation for participation was a key factor in interpretation of the responses.

Table 5. Undergraduate students' evaluation of the program

Statement	Strongly agree	Agree	Somewhat	Disagree	Strongly disagree
The research summit was organized.	12	8	4	2	1
The objectives were clear.	12	8	3	3	0
It was effective at providing prospective students with an understanding of graduate programs at Virginia Tech.	15	8	3	0	0
It was effective at providing prospective students with an understanding of research opportunities at Virginia Tech.	10	10	4	2	0
Overall, the research summit met my expectations.	13	8	4	0	1

Table 6. Undergraduate students' evaluation of different activities during the program

Activities	Very satisfied	Somewhat satisfied	Neither satisfied nor dissatisfied	Somewhat dissatisfied	Very dissatisfied	N/A or no comment
Campus tour	13	4	0	3	0	5
Student panel discussion	14	4	3	0	0	4
Admissions workshop	16	5	3	0	0	1
Poster session	16	2	1	1	0	5
Tours of colleges and departments	16	4	2	2	0	1

Students were also asked to respond to an open-ended question on their thoughts about attending graduate school. Sample responses are shown in Table 7. Our goal here is not to provide an exhaustive analysis of the survey data, but to provide an overview of the students' feedback as it relates to the major elements of the program. It should also be noted that although we received overall positive responses, students also identified some issues in particular with regards to communication and organization; we agree. We reflected upon the issues in planning and organizing in 2018 and were intentional about clear communication about the details of the program as well as coordinating between individuals and different units to be confident that the program went more smoothly for participants in the year 2019.

4.1.2 Interview

Among the 28 faculty who expressed interest to participate in an individual interview, seventeen faculty were invited. The criteria for participant selection was representation of a range of viewpoints in order to develop a more comprehensive understanding of the participants' experience. The survey responses were reviewed and different degrees of satisfaction with the program's activities and its objectives were captured. In summer 2018, we were able to coordinate and conduct interviews with six faculty. The participants' self-reported demographic data are summarized in Table 8. The interviewees represented different institutions; the majority were affiliated with public HBCUs, one was affiliated with a private HBCU, and one with a public HSI.

Semi-structured interviews were conducted virtually via Zoom. Each interview took about 30 minutes. Sample interview questions included the following: If you want to describe the HBCU/MSI Research Summit to someone else, perhaps your peers, how would you describe it? What specific activities did you find valuable? What specific activities would need improvements? How would you describe your experiences with developing research collaboration, if any? What has been the outcomes of the summit in terms of research collaboration?

Table 7. Sample post-program survey responses

Question	Student response
How has the summit influenced your thoughts about going to graduate school?	"The program influenced me to attend graduate school outside of my home state. The program also gave me an opportunity to network with people I normally would have not crossed paths with. It was a great experience."
	"It solidified my interests in graduate school and its interdisciplinary nature. The program exposed me to the possibility of connecting various aspects of science to allow me to be successful in my future research."
	"It definitely added Virginia Tech to my list of applications. I never would have considered the school if I hadn't attended the conference."
	"It made me believe I was capable of going to grad school."

The first author conducted and transcribed the interviews. The analysis of the interviews focused on the interpretation of the meaning of what participants stated (Brinkmann & Kvale, 2014). To develop a better understanding of data collected from each participant, the transcription has been reviewed several times. The analysis, therefore, explored the interconnection between different units of the data and the whole for the purpose of developing the codes. The codes were driven from data, and we have primarily used phrases selected by the participants to assign meaning to the units of analysis—In Vivo Coding (Miles et al. 2020). In the next step of the analysis, codes were grouped into themes that represented patterns of what participants experienced to provide a holistic picture of the interview results. This process was facilitated by comparing codes between different interviews. The three major themes that emerged from the data were: Building Relationships, Increasing Awareness, and Visioning Potentials. Under each category, participants discussed some common elements in relation to the program, centered on either students or faculty. In line with the focus of this paper, we only present faculty viewpoints as it relates to students' experiences. Participants represented shared views with regards to the results of such an initiative.

Table 8. Demographic information of participants (self-identified)

ID	Gender	Racial/ethnic background	Age
Participant 1	Male	Black	37
Participant 2	Male	Black	39
Participant 3	Female	Black	40
Participant 4	Female	African American	36
Participant 5	Male	White	51
Participant 6	Female	No response	40

The majority of the participants reflected on the potential for students' recruitment and described how the program influenced students' perspectives about attending a PWI:

…Normally they conceive those big land state universities as you know no-go place, but after they personally saw and asked all their questions, I thought some of the students

thought it's a good fit for them, so normally minority students are very hesitant to apply for large universities because this is why they select HBCUs, they feel different in non-HBCUs; so but Virginia Tech was very welcoming, they were, not all, but some of them affected … The most significant outcome for me was to see our students to believe themselves that they can go to Virginia Tech, you know; for an HBCU student it means a lot to have that possibility of acceptance, getting scholarship, …

Another participant's reflection indicated similar potential in students' recruitment centered around faculty confidence in the level of support HBCU/MSI students receive at a PWI:

A lot of the time what the challenges are between MSIs and PWIs as far as recruitment of our students to your institutions is feeling comfortable and confident that students will be supported, and I think that inviting us there and proving us the opportunity to not only see the environment, feel the environment, but meet people also in the environment helps facilitate us feeling more comfortable about sending our students. I mean I think we're not there yet because we haven't taken the step to start pushing people in that direction, but I think getting there and meeting people and feeling comfortable and confident that Virginia Tech is trying to provide an environment for their diverse student population is a helpful step towards wanting to push students in that space.

Yet, another faculty noted a multidimensional effect to demonstrate the impact of the summit as a pipeline program:

I definitely see a way to enhance students' recruitment; because just thinking that I was a PI at Virginia Tech and I had a chance, and I had a really really good student who came to my lab, who knows the research already that gives them head start in graduate school, and then that student gets to know what kind of environment he or she will be in as well; so I see it as being a major recruitment tool for Virginia Tech, as a pipeline of grad students who come through, and then that also helps them, again giving them a head start with the research because I've already been taped in to that lab, and they already know some of the people, ..

Overall, faculty viewed the initiative as a valuable opportunity to create dialogue and build relationships at both institutional and interpersonal levels, and highlighted the potential of the summit in facilitating shared endeavors between HBCUs/MSIs in addition to HBCUs/MSIs and the PWI. It should also be noted that two participants pointed out the need for established strategies to follow up on topics that were discussed and collaborations that were initiated.

5. Discussion
There is a gap of studies in the context of partnerships between PWIs and HBCUs or MSIs, and it appears that this important area of research has not gained enough attention. We hope that the ongoing research project on the HBCU/MSI Research Summit provide useful information for a better understanding of different factors that play a role in fostering successful, productive inter-

institutional partnerships and contribute to literature where there is a lack of studies that focus on partnership between different institutions, more importantly HBCUs/MSIs and PWIs.

From the limited data that we collected, it appears that the initiative was somewhat effective in terms of creating a context for inviting students to consider graduate degree programs and research opportunities at Virginia Tech which in turn leads to broadening participation. The question still remains about the support structure that the PWI can provide for these potential students who will join a new academic environment. The support structure should include retention strategies, funding, community building opportunities, and access to resources.

Reflection on the HBCU/MSI Research Summit revealed several lessons to consider for future execution. The first category of these reflections is communication. Due to the large number of HBCU/MSI faculty and students, Virginia Tech faculty involvement, and representatives from multiple departments, consistent schedule records and the ability to respond quickly was imperative. As with any event, willingness to answer questions, share information, and provide solutions is needed. The summit benefitted from written communication via email in advance of the event, copying the appropriate parties on communication, and printing out physical copies to serve as a guide during the event. While logistical questions and comments still occurred, it was helpful to be responsive and reaffirm the commitment to hospitality.

The next category is differences cannot be treated the same. While the summit has different categories of participants, ranging from HBCU/MSI faculty and students to Virginia Tech faculty and students, the educational and professional objectives of each group and within each group varied. For example, not all HBCU/MSI faculty have consistent research agendas or the ability to prioritize research over teaching. These participants had needs different from those whose role allowed them to focus primarily on research which reflected disparities in publication records, funding support, and openness to find collaborators. For HBCU/MSI students, since participants are either current undergraduate students or master's level students, this population had multiple variances. The purpose of participation in the summit has a wide range of urgency depending on if the participant is a senior versus a sophomore. In addition, for master's level students, the challenge was greater to connect with other student participants. Future planning focuses on prioritizing these differences and providing options for all to accomplish their objectives in participation.

The last category of improvement for the summit is relationship development. This reflection is heavily focused on the HBCU/MSI student participants. One of the objectives is to showcase research at Virginia Tech and encourage student participants to apply to the PWI for graduate education. Exposure is valuable, but the follow-up is even more important to develop and maintain a relationship between Virginia Tech and the HBCU/MSI students. Careful consideration should be given to regular check-ins for past participants, opportunities to disseminate information in multiple modes (i.e. email, phone call, video call), and assist with

application issues. By improving this area, the yield of applicants will increase and will impact future participants.

While the summit is not a final blueprint, it is an example of an institutional commitment to research, recruitment, and resource sharing between a PWI and HBCUs/MSIs. A PWI has potential opportunities to share with HBCU/MSI students and faculty. The reciprocal relationship is equally valuable in order to create and sustain inter-institutional partnerships. The impact of the summit will have a lasting imprint on graduate education at Virginia Tech, the professional and education choices of its student participants, and the numerous grants, publications, and collaborative results among faculty members. While the quantification of these trends take time, communication, and consistency, the relationships are valuable for all of the program participants.

Imagine if other PWIs initiated similar efforts to create an intricate network between them and HBCUs/MSIs. Importantly, such efforts will also foster relationships among HBCUs/MSIs as well as partnerships between several institutions. The desire to collaborate is present between all of the institution types and reinforces the common goal of success and institutional progress. With each year, the summit improves and has growing interest across the United States. By focusing on the experience of past participants of the summit, the blueprint will continue to be improved and ultimately transferrable for others to implement for years to come.

References

Brinkmann, S., Kvale, S. (2014). *InterViews: Learning the craft of qualitative research interviewing*, SAGE.

Ghee, M., Collins, D., Wilson, V., & Pearson, W. (2014). The Leadership Alliance: twenty years of developing a diverse research workforce, *Peabody Journal of Education, 89* (3), 347-367.

Hussar, B., Zhang, J., Hein, S., Wang, K., Roberts, A., Cui, J., Smith, M., Mann, F.B., Barmer, A., and Dilig, R. (2020). *The condition of education 2020* (NCES 2020-144). U.S. Department of Education. National Center for Education Statistics.

Knight, L., Davenport, E., Green-Powell, P., & Hilton, A.A. (2014). An analysis of historically Black colleges and universities student retention and attrition efforts. *International Journal of Humanities Social Sciences and Education*, 1(8), 123–138.

Miles, M. B., Huberman, A. M., & Saldaña J. (2020). *Qualitative data analysis: a methods sourcebook* (Fourth). SAGE.

Moore, C.M., Webb, S.F., Smith, C.V., Lacy, M., & Martin, T. (2018). Telling a Story of Student Success at HBCUs: Barriers for Researchers at a PWI. In Brown, M. C., & Bartee, R. S. D. (Eds.), *Models of success: How historically black colleges and universities survive the economic recession* (pp. 21.33)*. Information Age.

Stassun, K.G., Burger, A., & Lange, S.E. (2010). The Fisk-Vanderbilt master-to-PhD bridge program: A model for broadening participation of underrepresented groups in the physical sciences through effective partnerships with minority-serving institutions, *Journal of Geoscience Education*, 58(3), pp. 135-144.

Upton, R. & Tanenbaum, C. (2014). *The role of historically black colleges and universities as pathway providers: Institutional pathways to the STEM PhD among black students*, Washington, DC: American Institutes for Research. Retrieved from http://www.air.org/resource/role-historically-black-colleges-and-universities-pathway-providers-institutional-pathways