

MISSION IN MOTION



HBCU ENGAGEMENT AND COLLABORATION

Deliberate, strategic engagement to deepen research and programmatic partnerships.



Strengthening
University-Industry
Partnerships

MARCH 28-29, 2022 • ATLANTA, GEORGIA

This was the specific intent for a first-of-its-kind event that convened 99 unique organizations—Historically Black Colleges and Universities, industry, government, nonprofits, and other institutions—to share practical ways to enhance and build relationships. Nearly 250 thought leaders, practitioners, and experts from across sectors candidly discussed ways to work together across talent, research, program, and government engagement.

Mission in Motion was held March 28-29, 2022, in Atlanta. Local co-hosts were the Atlanta University Center Consortium, Clark Atlanta University, Morehouse College, and the Morehouse School of Medicine.



“I have attended a lot of programs aimed at fostering collaborations. However, this one was designed with education and conversation as outcome goals. The intentional design worked!”

– Saranette Williams, Norfolk State University



ALMESHA CAMPBELL, JACKSON STATE UNIVERSITY



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Reunited and it feels so good!

It was our true pleasure to host the receptions following the two UIDP conferences. It was incredible to be able to finally gather together in person again. After all, as we've all learned, community is more than people physically occupying a common space, it is a feeling of unity and fellowship with others as a result of sharing common attitudes, interests, and goals.

Community facilitates sharing, and sharing can produce novelty. But you can't just put a bunch of people together and expect innovation to happen, you have to be conscientious about building the framework for connections to be made, ideas to flourish, and innovation to be realized.

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Event organizer UIDP was fortunate to secure expertise from 109 presenters and speakers representing diverse organizations and sectors. Meeting attendees can download materials from many of the sessions through the UIDP Resource Center.

Mission in Motion cast a spotlight on leadership perspectives from the across various sectors, but it also featured practical takeaways from connectors who work every day to strengthen university-industry partnerships – sometimes done in collaboration with government or nonprofit sector support. Two workshops on Day 1 provided foundational principles for corporate-academic engagement connectors and for those in contracting and technology transfer to learn from their peers. Leadership perspectives marked sessions throughout the conference, including a Day 2 panel led by Erwin Gianchandani, NSF's inaugural assistant director for the Technology, Innovation, and Partnerships Directorate, and featuring candid perspectives from David Thomas, president of Morehouse College; Victor McCrary, vice president for research at The University of the District of Columbia; and Nicolle Parsons-Pollard, interim provost and senior vice president for academic affairs at Georgia State University.

This report includes high-level takeaways from every session at Mission in Motion. But among the most valuable elements of an event like this are the one-on-one conversations in the hallway

during a break, over lunch during a table topic session, or in a focused conversation at dinner. Although there is no way to summarize these serendipitous moments, there are a handful of themes we can share here.

HBCUs want true partners and have much to offer. They seek active collaborators and want to engage with their significant capabilities and talent.

HBCUs are not all the same. Their research strengths differ and their focus areas for industry partnership vary widely.

Invest the time to fully understand your partner's long-term goals. Then boldly build the relationship in a mutually beneficial direction. HBCU presenters said they want industry, nonprofit, and government partners to get to know them and understand their capabilities and needs.

Scale expectations appropriately; many suitors are knocking on HBCU doors. HBCU academic administrators, partnership and sponsored research staff, as well as faculty, wear many hats. Transactional activities such as a one-time five-figure, one-time sponsored research agreement is not attractive if the reporting or collaboration demands are too burdensome.

UIDP is grateful to the organizations that supported Mission in Motion generously through sponsorship and attendee travel support.





“There were a lot of free-flowing ideas and opportunities for collaboration that spun out of this event. Looking forward to continuing numerous conversations with other attendees.”

– Deidre Richardson, Huron Consulting Group

Workshop – Foundational Aspects of Industry Sponsored Research and Technology Transfer

Presenters: Jarrett Ellis, Georgia Institute of Technology; Sophia Herbert-Peterson, Georgia Institute of Technology; Yogesh Sharma, Novartis; John Jordan Jr., Remix: the Soul of Innovation; Markese Wayne Bryant, Remix: the Soul of Innovation; Terry Adams, Howard University; Victoria Sowemimo, Huron Consulting Group; Deidre Richardson, Huron Consulting Group

Negotiating industry sponsored research agreements is challenging—even for the most seasoned negotiators. And managing resulting intellectual property (IP) in a way that ensures return on investment in intangible assets can be tricky to operationalize. This workshop was prepared for university research administrators or others to gain key insights on effective negotiation strategies, address common issues faced when seeking to get an agreement in place, identify strategies for reaching an agreement, and procedures for maintaining IP assets. Much of the material was based on foundational concepts from UIDP’s publicly available [Contract Accords](#).

Takeaways:

Novel IP from sponsored research can take many forms. Universities may want to limit access to data, for example. Each party needs to understand how IP will be used, rights sought, etc. from the start.

Communicate openly and operate transparently. For example, understanding expectations from both parties ensures that everyone can arrive at a reasonable agreement.

Tech transfer and entrepreneurship program capacity can be outsourced to maximize impact.

- » Example: In Atlanta, Remix is a group that works with HBCUs to support university-industry collaboration. It has a broader mission to engage industry in local innovation, creativity, and shared value—not just tech transfer and workforce development.
- » Example: Howard University offers training, sponsored by a financial services company, for researchers and other participants. This incubation program develops startups and the entrepreneurial communities. Services include IP management, trademark services, and other guidance.
- » Example: [Kentucky Commercialization Ventures](#) (KCV) works with partners across the state, including Kentucky State University, to foster entrepreneurship, tech transfer, and research translation. By focusing on commercializing ideas from Kentucky’s public universities and colleges, KCV offers a unique resource to its partners interested in translating IP and research findings to market-ready products. (see more from the KCV case study later in this report).



APRIL LOVELADY, PRAIRIE VIEW A&M.

Workshop – Essentials for High-Impact Corporate Engagement Programs

Presenters: Coleen Burrus, Princeton University; Richard Lucas, Clark Atlanta University; Rodney Trapp, the University of the District of Columbia; Karina Edmonds, SAP

Corporate engagement offices play a vital role in supporting fruitful relationships between universities and industry collaborators. This workshop spoke to the process of building and maintaining a successful corporate engagement program at a university as well as specific engagement practices such as crafting a research capabilities statement to share with potential partners. The material was useful not only to those looking to create or revamp a corporate engagement office but also those looking to sustain efforts for the long haul.

Takeaways:

Reciprocal relations and motives are at the center of engagements. Mutually beneficial opportunities are a requirement. Parties should determine what they want out of the engagement and what research interests to focus on as they build capacity.

It’s important to define why the university wants to work with industry. Consider the elements that define the engagement, e.g., is it faculty engagement or funding? If it’s about the money, the relationships won’t flourish. As a university, be nimble in negotiating so that parties can get what is needed.

Start at the bottom. Relationships are an investment and require embedding. Determining where the engagement starts and where it should lead is critical. Make sure the right people are at the table and map out the path to a strategic partnership.

KENDRICK BROWN, MOREHOUSE COLLEGE;
ASHLEY LLORENS, MICROSOFT



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Collaborations to Build HBCU Research and Program Capabilities

Moderator: Luwanda Jenkins, 1890 Universities Foundation

Presenters: Michelle Bingham, Idaho National Lab; Tiffany Blacknall Benjamin, Amazon; Lisa Smith, Intel Corporation

Many external organizations seek to partner with HBCUs and other emerging research organizations as a way to support their goals of sustainably building research and program capabilities. This session explored how external parties—companies, nonprofits, government agencies, and others—can partner with those colleges and universities seeking to bolster their research and program assets.

Takeaways:

Partnerships arise from relationships. Develop relationships with faculty. Companies can serve on university advisory panels and help shape curriculum, or representatives can serve as adjunct faculty. They can also assist with the infrastructure and “quick-start” curricula, as well as educate-the-educator efforts to start to build relationships.

HBCUs should build from their strengths. Leverage engagement to start and expand programs.

The pandemic has opened up new opportunities. It has helped to break down barriers as parties have all had common problems to navigate. It provided freedom from geographical boundaries with a move to virtual relationships. It also highlighted equality of infrastructure using existing relationships and allowed partners to engage and pivot.

Fireside Chat with Ashley Llorens of Microsoft

Moderator: Kendrick Brown, Morehouse College

Presenter: Ashley Llorens, Microsoft

Computing research is evolving from primarily being focused on solving problems in computing to solving problems in society. To address pressing societal challenges, companies must commit to investment in sustained effort. Many times, these initiatives require collaborations with external groups—national labs, universities, and other companies—and involve specialized infrastructure. As important developers of talent and emerging research institutions, HBCUs can play a role in these complex research and innovation ecosystems.

Takeaways:

Ethics in computing includes holistic thinking and ethical grounding. It goes beyond computer science and natural language processing and includes innovating together and proper representation in the data. People with expertise in the process should be the liaisons to the Black community.

Mutually beneficial partnerships are a larger benefit to marginalized communities. The key to successful partnership is having shared goals, solving problems together, and looking beyond the easy solution.

HBCUs are not a monolith nor just a supplier of labor. There needs to be an exchange of information and resources dedicated to mutually beneficial partnerships.

Microsoft-1890 Universities Foundation Partnership

Moderator: Mortimer Neufville, 1890 Universities Foundation

Presenters: Darrell Booker, Microsoft; Paul Jones, Fort Valley State University

In 2021, Microsoft and the 1890 Foundation embarked on a new partnership. Committing to a three-year investment in accelerating tech, broadband access, workforce development, and capacity building initiatives, Microsoft supports the Foundation in assisting its 19 member universities achieve greater success. This session explored the beginnings of the partnership and provided an update on its efforts to date.

Takeaways:

Microsoft partnered with the 1890 Universities Foundation to help level the playing field by doing long-term sustainable projects and bringing additional strategic industry partners.

The 1890 Universities Foundation includes 19 organizations with great leaders. It allows industry to go to one organization to engage with many organizations all at once. It is through the building of relationships that industry can better connect to the unique assets of the universities.

Industry and HBCUs need to have conversations before initiatives are rolled out. To make sure it is beneficial for both parties, HBCUs need to have a seat at the table for the initial discussions.



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Striving for Equity in Health Research

Moderator: Pamela Clarke, Howard University

Presenters: Melissa Bishop-Murphy, Pfizer; Carmen White, Pfizer; Crystal Canja, Frederick National Laboratory for Cancer Research; James Lillard, Morehouse School of Medicine

In light of the pandemic and recent racial justice movements, government, corporations, and HBCUs have been building partnerships not only to increase diverse talent but also to advance health equity in research. In this session, representatives about Morehouse School of Medicine’s partnership with the Frederick National Laboratory for Cancer Research discussed how companies can partner to support health equity and what these partnerships mean for schools across the nation.

Takeaways:

It’s not always “funds first.” Partners need to establish trust, build relationships, and align on long-term mission and commitment.

Know who the gatekeepers are at collaborating institutions and understand that old thinking must shift. The mission is to build community so that endeavors previously thought unattainable are possible.

Know the partner core capabilities and where the gaps are. These must be articulated clearly and honestly.

– Mortimer H Neufville, 1890 University Foundation

Linking Philanthropy to other Engagement Efforts

Moderator: Lori Walton, Lockheed Martin

Presenters: Shawnta Friday-Stroud, Florida A&M University; Joshua Humbert, Coppin State University; Mark Veich, Deerfield Foundation

Over the past year, HBCUs have seen record-breaking philanthropic gifting from a range of industries and foundations. But how can corporations use philanthropy as a springboard to build long-term engagement efforts and mutually beneficial relationships? This session explored some of the steps interested partners can take to move from gifting to holistic engagement with HBCUs.

Takeaways:

The “secret sauce” of good partnerships includes long-term engagement, adds value to all partners, and sets expectations up front.

To maximize funding, be transparent, create a positive feedback loop, overdeliver on commitment, did deep to be a strategic partner, and support other needs such as technology, scholarships, etc.

Strong industry partnerships provide real support to students (scholarships), provide a hiring pipeline (not just an internship), create exposure, and incorporate plans for strong marketing/branding.

Building an HBCU Engagement Program at Your Company

Moderator: LaKeisha Harris, University of Maryland Eastern Shore

Presenters: Kory Hawkins, Microsoft; Beverly Walker, Lockheed Martin; Vareva Harris, Benedict College

As companies seek to work with new partners at HBCUs, representatives want to know about pitfalls to avoid as well as proven success strategies. This session featured HBCU and company representatives discussing what makes engagement programs successful and what HBCUs value most from industries as they build and grow these relationships.

Takeaways:

Companies need to know the best point of contact in the university. This may include everything from personal engagement to planning events around the academic/athletic calendar.



“The Mission in Motion Conference successfully convened university, federal government and industry partners which strengthened current university- industry partnerships and provided the ideal forum to build new university-industry partnerships. This was an outstanding conference and I gained new contacts to continue building research collaborations that will benefit my institution.”

– Pamela A G Clarke, Howard University

It’s important for companies to know the structure for university engagement at the institution to keep the lines of communication open and to develop understanding of needs and goals.

Sustainable relationships with HBCUs—rather than one-offs—should be the goal.



MARCUS BURGESS, CLAFLIN UNIVERSITY

“This was an outstanding event that brought together government, industry and academia with some thought-provoking sessions in support of the academic community.”

– SHERINE OBARE, NORTH CAROLINA A&T AND UNC GREENSBORO

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“I really enjoyed the Mission in Motion conference. This has been a great opportunity to focus on HBCUs and industry partnerships, and these relationships will be extremely beneficial to improve diversity in our corporate organizations.”

– LaKeisha Harris, University of Maryland Eastern Shore

Strategies for Identifying Federal Funding Opportunities

Moderator: Michael Ledford, Lewis-Burke Associates

Presenters: Charles Weatherford, Florida A&M University; Sherine Obare, North Carolina A&T University; Edward Lee, Air Force Office of Scientific Research

Finding the best funding opportunity for a research project can be a challenge. Because the process of proposal development, review, and selection takes time, it's important to start looking for funding early and efficiently. From good prep work and research to direct outreach, this session dove into how to identify opportunities within federal government agencies where the choices can be overwhelming, and the competition is stiff.

Takeaways:

Faculty coaching for engagement and collaboration is critical. This helps faculty learn the skills and practices needed to be successful in proposals.

Partnering with R1s is a prime strategy. These partnerships can help HBCUs make wins in collaborative research.

Culture is key to building research capacity at HBCUs. Ask the important questions: Is there support in place? Are participating faculty going to be adequately recognized and rewarded?

Tackling HBCU Engagement Myths

Moderator: Julie Sills Molock, The Propel Center

Presenter: Rebekkah Hogan, Meta

There are a variety of myths about HBCUs and their research enterprise that may inhibit potential partners from seeking them out as collaborators. In this fireside chat, these myths were identified and addressed.

Takeaways:

Engage with HBCUs beyond internships. Internships are not enough and there aren't enough internships. For meaningful, lasting engagement, invest in faculty by bringing them to the company for research opportunities or send scientists to the universities as visiting scholars.

When recruiting and selecting students, think beyond GPA. Be more comprehensive and consider what it has taken that student to get to where they are.

Be patient when reaching out. HBCU personnel may be wearing many hats and has competing priorities. Be mindful of time investment on both sides, and plan to make the interaction meaningful.

The Art of HBCU Partnerships in Data Science

Speaker: Talitha Washington, Atlanta University Center Data Science Initiative

Not all partnerships work. How is the Atlanta University Center Consortium (AUCC) Data Science Initiative creating new ways to partner that advance data science? Talitha Washington, director of this initiative, was recently challenged to synergize data science at four HBCUs—Clark Atlanta University, Morehouse College, Morehouse School of Medicine, and Spelman College. In this session, she outlined the process of bringing together faculty from four HBCUs, what it takes to collaboratively build industry relationships, and tips for developing data science talent.

Takeaways:

The Atlanta University Center (AUC) Data Science Initiative has two main goals: to be a significant producer of African Americans with expertise and credentials in data science and to lead national efforts to address race, gender, and social justice aspects of data science.

The idea is to empower innovators. The AUC Data Science Initiative designs and implements programming that supports faculty research and curriculum development.

The initiative works with partners and sponsors to support programs. Partners co-develop programs, contribute to research and training, provide guest lectures, and offer real world applications and more.

Unleashing the Power of Innovation Together

Moderator: Paula Shaw, Norfolk State University

Presenter: Pat Lord, Lam Research Corporation

Lam Research, a global supplier of innovative wafer fabrication equipment and services to the semiconductor industry, enables its customers to build smaller and better performing devices. Through innovation, including research collaborations with universities, it is driving toward the next technology breakthrough for the semiconductor industry. This session focused on the need for innovative research in the semiconductor industry.

Takeaways:

The world is critically dependent on semiconductors. Despite dynamic growth in how electronics are embedded in our lives, industries are only in the early stages of what is possible in leveraging the power of semiconductors.

Lam Research is a leader in innovation and fabrication. While semiconductor chip shortages have been highlighted by the media, Lam is involved in every step of the wafer fabrication process.

The company seeks to accelerate innovation through AI, data, and partnerships. Lam is working to collaborate with faculty and invest in research to open new facilities.

Fostering HBCU Research Partnerships: Princeton's Alliance for Collaborative Research and Innovation

Presenters: Rodney Priestley, Princeton University; Tod Hamilton, Princeton University

Princeton's new initiative (launched in spring 2022) establishes a fund to support faculty research projects co-led by principal investigators from Princeton and from a cohort of HBCUs. The goal of the [Princeton Alliance for Collaborative Research and Innovation](#) (PACRI) is to generate new knowledge and discoveries across a wide range of disciplines, including science, engineering, the social sciences and humanities—and foster rich collaborations that will drive innovation and excellence. Moreover, the initiative aims to develop relationships among the universities' research professionals, including in the offices of technology transfer and research and program administration.

Takeaways:

In its initial phase, Princeton researchers and researchers from Howard University, Jackson State University, Prairie View A&M University, Spelman College, and the University of Maryland Eastern Shore will co-lead research projects. These projects will be funded by Princeton University through its new PACRI.

PACRI is designed to extend the research and innovation capacity of faculty across institutions by creating a network of expertise and technical capabilities and fostering collaboration through its funding.

Multidisciplinary teams are a key program element. The five institutions selected for the initial pilot represent expertise across a range of disciplines. This is intentional to allow for multidisciplinary teams to collaborate and address research problems in a multi-faceted fashion.



TUFF is a proud Community Partner of UIDP and a Sponsor of the successful Mission in Motion event at Atlanta's Tech Square.

Over TUFF's 40 year history owning facilities, we have witnessed how university-industry partnerships build community and foster economic development.

TUFF's seven key takeaways from the Mission in Motion event are:

- Identify your core competencies
- Seek partners who align
- Partnerships start small
- Build a robust corporate engagement office
- Bring industry to campus
- Proximity of students and industry promotes a healthy ecosystem
- Actively and jointly pursue federal funding opportunities

If you are contemplating community-building through university and industry co-location, please reach out to a member of our team at www.tuff.org.



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DAVID MARSHALL, MORGAN STATE UNIVERSITY



“I came back (from Mission in Motion) so inspired (and with a notebook full of ideas). The type of collaboration we saw generated from all the HBCU and corporate participants at this UIDP event is a prime example of how academia and industry can collaborate to create positive outcomes for learners, schools, companies, and society.”

– Jeffrey Moss, Parker Dewey

Real Experiences, Real Relationships

Moderator: Russette Lyons, Novartis

Presenters: Jeffrey Moss, Parker Dewey; Cheyenne Boyce, HubSpot; David Marshall, Morgan State University

Companies seeking to engage with HBCUs and their students may wonder what strategies work best over the long-term. In this session, attendees heard from panelists about their experiences, challenges, and lessons learned when beginning and sustaining a partnership. From HubSpot’s relationship with Morgan State University to their more recent use of the micro-internship model with Parker Dewey, HubSpot has learned that real experiences lead to real relationships for companies, universities, and students alike.

Takeaways:

Providing real, professional experiences for students also creates value for employers and academia. These experiences are an introduction to potential job candidates, build authentic relationships, allow employers to effectively evaluate skills, and ultimately improve hiring, diversity, and retention outcomes. HubSpot’s micro-internships program has allowed it to embrace a more holistic approach to supporting professors and students. Student gain educationally through HubSpot Academy and improved opportunities for employability. The company is creating a network of highly motivated college students who are familiar with its products and offering their skills to partners and customers.

Students are hungry for these experiences, and it doesn’t need to be hard to provide them. According to a recent student survey, 93% of college students expressed that the most effective way to recruit them was through real experiences. Efforts like micro-internships do not require the onboarding HR or administrative burdens on companies, add to faculty workloads, or require integration into curricula. However, it’s important to select the right projects. They should be short-term, add value to the employer, and allow the student to practice or apply their skills.

Adaptability and flexibility in student engagement is key, especially in partnerships between industry and minority serving institutions (MSIs) like HBCUs. HubSpot’s Education Partner Program, HubSpot is providing free resources to faculty that can be leveraged in the classroom to support learning outcomes. In addition, this program is funding opportunities for [students to work on micro-internships](#) on [behalf of HubSpot clients](#). Beyond students getting valuable experience and building relationships that could lead to longer-term roles, this also is positioned by HubSpot as a “perk” for employer partners.



PATTI ROSS, UNIVERSITY OF UTAH



ADRIENNE ROYSTER, STILLMAN COLLEGE

Innovation, Entrepreneurship, Promotion, and Tenure

Moderator: Teresa Orok, Alabama A&M University

Presenters: Karl Mundorff, Oregon State University; Rich Carter, Oregon State University; Almesha Campbell, Jackson State University

In the face of processes that often overlook important faculty contributions, the Promotion and Tenure-Innovation and Entrepreneurship (PTIE) coalition works to support policies that fully recognize the impact of faculty innovation and entrepreneurship. This breakout discussed the work of the PTIE coalition, the ways faculties benefit society beyond normal tenure metrics, and how “broadening the bar” can provide a more inclusive environment for faculty and students.

Takeaways:

The **PTIE coalition** was established to provide a recognition and reward pathway for entrepreneurship and translational science activities not traditionally included in criteria for tenure. The three specific goals are to broaden the criteria for promotion and tenure to make the process more inclusive of innovation and entrepreneurship impact by university faculty; to improve transparency and fairness while reducing bias in the promotion and tenure process; and to provide a super structure to support concurrent efforts to recognize other forms of evolving impact.

PTIE recommendations were **published in fall 2021 in Science**. To date, this NSF-funded effort has fielded a survey to evaluate current paradigms and convened representatives from universities and other stakeholder organizations to create and refine these recommendations for changes to promotion and tenure practices.

The coalition will continue to build on this work and disseminate the recommendations through stakeholder meetings to discuss the value and inclusion of evidence-based data, experimental knowledge and impact outcomes arising from innovation and entrepreneurial achievements.

HBCU-Corporate Partnerships in Pursuit of Federal Funds

Moderator: Jason James, VMware

Presenters: Jagannathan Sankar, NC A&T University; Tonjia May, NC A&T University

Increasingly, large federal awards require universities to find corporate partners to translate the use-inspired research that is funded by the agency. This session discussed strategies for the work that is needed to cultivate relationships in advance of pursuing these opportunities and maintain those partnerships.

Takeaways:

There are several key questions to ask before pursuing research: Is there a budget for this research? Is there the human infrastructure required to support it? Are research capabilities and intellectual infrastructure in place to accomplish the research?

If institutions do not have all these mechanisms in place, federal funding may be a way to overcome challenges. There are many opportunities, but they are extremely competitive and proposals have to make a compelling case for funding. It’s wise to start recruiting partners and new faculty early in the process. The NSF budget (as well as those of other federal R&D agencies) is growing, so preparing now and cultivating partners should start before solicitations are released.

Another means to pursue research is to engage with industry as a collaborator. VMware approached leadership and got buy in for outcomes. Then, it worked with HBCUs to build out programs to support the research projects.

A National Model for Strategic Partnership: NCCU and RTI International

Moderator: Scott McGregor, Cisco

Presenters: Tamara Terry, RTI International; Deepak Kumar, NC Central University

Three years ago, RTI International and North Carolina Central University leaders co-created a strategic partnership to intentionally strengthen and expand their relationship by identifying specific and focused opportunities that would mutually benefit both institutions, including growing joint collaborative sponsored research related to health equity in underserved communities. Recently, the [partnership expanded](#) to include shared lab space to support health and environmental justice research. This breakout session addressed the importance of industry leaders strategically partnering with HBCUs and offered recommendations for developing sustainable partnerships with HBCUs. Participants in this session learned about best practices on how to develop transformational relationships and effective partnerships with HBCUs to benefit faculty and students, through the lens of the NCCU-RTI partnership.

Takeaways:

Co-creating sustainable partnerships is the goal. Co-creation is also essential for success, and it needs to start at the top. In this case example, the partnership started when the chancellor and CEO met and agreed to commit resources over three years. It’s important to identify relationship managers early on so they can build mutual trust as well.

Both partners should share oversight and responsibilities. A joint working group formed with representatives from NCCU and RTI International. This group meets quarterly and provides leadership and guidance. A joint lab was established, with RTI International providing space and equipment on its campus for NCCU faculty to access at any time.

Extend the partnership beyond single projects to grow sponsored research opportunities. In this case, this includes seeking small business opportunities; supporting faculty, students, and research staff; and enabling workforce development.



“We view the TIP Directorate as an opportunity for us to double down on use-inspired research—solution-oriented research—as well as on the translation of research to practice. We think there is an opportunity for us to really focus on that space in a way that can allow us to not only address some of our foremost challenges, but at the same time to also help us to maintain societal, economic competitiveness and leadership for the country into the future.”

— ERWIN GIANCHANDANI, NSF TECHNOLOGY, INNOVATION, AND PARTNERSHIP DIRECTORATE



ERWIN GIANCHANDANI, NSF;
DAVID THOMAS, MOREHOUSE COLLEGE;
NICOLLE PARSONS-POLLARD, GEORGIA STATE UNIVERSITY;
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Legislative Update

Presenter: Michael Ledford, Lewis-Burke Associates LLC

University-industry relations continue to grow and rise to the challenge of partnership in unprecedented times. This session provided an update from the president of Lewis-Burke Associates on new and expected regulations and legislation impacting research and development and innovation at large.

Takeaways:

With FY2022 appropriations finalized, there is a lot of funding to be obligated in a short period of time. This includes an increase in most domestic research agencies.

Current and emerging legislation around innovation and competitiveness has been fluctuating. As funding coalesces, there are opportunities for universities and research organizations to receive funding. The [Creating Helpful Incentives to Produce Semiconductors \(CHIPS\) for America Act](#) still requires joint competitiveness legislation from the House and Senate for funding.

As CHIPS comes to fruition, next steps are coming into focus. The next budget request will follow up on current requests including those for the NSF Technology, Innovation, and Partnerships (TIP) directorate.

Advancing Societal Interests through Strategic Collaborations

Presenters: Erwin Gianchandani, NSF; David Thomas, Morehouse College; Victor McCrary, The University of the District of Columbia; Nicolle Parsons-Pollard, Georgia State University

NSF is the funding source for approximately 25 percent of all federally supported fundamental research conducted by America's colleges and universities, and in many fields such as mathematics, computer science and the social sciences, it is the major source of federal backing. New legislation calls for significantly expanding NSF through additional resourcing. This talk previewed NSF's plans pursuant to the legislation, including the new [directorate for Technology, Innovation and Partnerships](#). Following this presentation, a strategically assembled panel of university leaders discussed how partnerships between various parties in the innovation ecosystem can collaborate to advance their goals and advance national interests.

Takeaways:

As part of the new [Technology, Innovation and Partnerships](#) directorate, NSF is establishing [Regional Innovation Engines](#) designed to cultivate new regional innovation ecosystems

throughout the United States and to address major scientific/ technological goals while solving societal challenges. Initial technical focus areas are artificial intelligence, equitable access to health care and education, and critical and resilient infrastructure.

From the HBCU perspective, federal innovation funding should be directed to institutions where they are. HBCUs seek partners that are interested in establishing lasting relationships based on mutual trust and where they play a substantive, rather than a trivial, role.

By creating regional innovation hubs in non-urban communities or communities where the technology industry is not already present, NSF intends to expand innovative R&D throughout the United States and leverage strengths that are largely untapped to advance these key technology areas.



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LAURA COLLINS, NORTH CAROLINA A&T UNIVERSITY;
MICAH GLENN, KENTUCKY STATE UNIVERSITY;
KAYLA MEISNER, KENTUCKY COMMERCIALIZATION VENTURES

Tools of the Trade: Kentucky's Model for Facilitating Commercialization

Moderator: Laura Collins, North Carolina A&T University

Presenters: Kayla Meisner, Kentucky Commercialization Ventures; Micah Glenn, Kentucky State University

An engine for statewide innovation, [Kentucky Commercialization Ventures](#) (KCV) works with partners across the state, including Kentucky State University, to foster entrepreneurship, tech transfer, and research translation. By focusing on commercializing ideas from Kentucky's public universities and colleges, KCV offers a unique resource to its partners interested in translating IP and research findings to market-ready products. In this session, KCV and Kentucky State University discussed this collaborative model, their partnership, and the lessons learned.

Takeaways:

Kentucky Commercialization Ventures is the state's science and technology public-private partnership organization and may be a model that can be replicated by other states. It identifies and amplifies resources to the state's public universities and colleges to transform ideas into services, products, processes, startups, and investments supported by intellectual property.

Industry opportunities must match institutional needs. Each university and HBCU is unique, and the most effective engagement will start when industry meets the university where it is.

Limited capacity (e.g., HBCU resources) does not equate to limited ability. There is a wealth of expertise and dedication to be found on HBCU campuses, but there are also people being asked to do too much. Organizations like KCV can assist faculty through the idea disclosure and opt-in processes in partnership with their institution and helping to manage the process of commercialization.



"Mission in Motion was an exciting opportunity to meet with industry and government officials."

– Morakinyo A.O. Kuti, Central State University

NSF Convergence Accelerator

Presenter: Doug Maughan, NSF

Douglas Maughan, who leads the [NSF Convergence Accelerator](#), gave an update on the program and provided information on how interested parties (companies, local and state governments, non-profits, and universities) can get involved.

Takeaways:

Our nation and society are facing a pivotal moment with climate change, issues around equity, and a need for critical infrastructure. NSF can respond with a new enterprise to meet the moment by leveraging partnerships, working at pace, and meeting demand from society and the economy. The new NSF TIP Directorate is leading this effort.

Topics in the [January 2022 solicitation](#) are:

- » Enhancing Opportunities for Persons with Disabilities;
- » Sustainable Materials for Global Challenges; and
- » Food & Nutrition Security

The Convergence Accelerator has multiple funding mechanisms. Researchers and innovators are welcome to apply through traditional NSF solutions and broad agency announcements.



DOUG MAUGHAN, NSF CONVERGENCE ACCELERATOR



RAHEEM BEYAH, GEORGIA INSTITUTE OF TECHNOLOGY;
DARNELL MOORE, AMAZON

Fireside Chat: Leadership Insights from Diverse Perspectives

Presenters: Darnell Moore, Amazon; Raheem Beyah, Georgia Institute of Technology

As a product of an HBCU, Georgia Institute of Technology's Raheem Beyah shared his insight from roles as a cybersecurity professor and subject matter expert, school chair of electrical and computer engineering, vice president of interdisciplinary research, and now dean of one of the top ranked engineering schools in the world.

Takeaways:

The field of engineering is working towards equity. Diversity, equity, and inclusion (DEI) has to be a part of the engineering curriculum so that systems are designed and built for everyone.

Forming a network to support students is important. Industry support and partnerships with higher education can add to that network.

Our nation produces too few African American Ph.D. students in engineering. Academics, researchers, and industry partners need to encourage and not give up on that population.

From Talent Pool to Research Park/ Innovation District

Moderator: Greg King, Georgia Institute of Technology
Presenters: Brian Darmody, AURP; Charles Ross, InBIA;
Affan Sheikh, Hayat Brown

Research universities can serve as a linchpin to research parks, regional tech hubs, and innovation districts, but how can HBCUs build on their talent base and engage in the process of creating these systems? A panel of experts discussed current research hubs, the role of incubators and accelerators in creating research parks, and examples of HBCUs currently building innovation spaces around their campuses and linking to corporations.

Takeaways:

AURP is a key industry association and resource for research park opportunities. AURP can help organizations keep up with changes in federal programs that fund research parks.

Research parks are useful for “creating cohesions” for great ideas from different disciplines. Be sure to engage community organizations that may touch, want access to, or be impacted by research parks.

Howard received \$300 million in federal funding for a [research center for health disparities](#). Funding leveraged student housing in a research park masterplan and incorporated childcare. Instead of importing prosperity, the aim should be **improving the prosperity of those who are in the community already.**

“

“It was inspiring to learn about successful partnerships between HBCUs, research universities and industry partners. It gave me some good ideas for potential partnerships that my institution could pursue.”

– Melissa A. Harrington, Delaware State University

Students and Contracting Considerations

Moderator: Jilda Garton, UIDP

Presenters: Xiquan Cui, the Home Depot; Paul Lowe, Kansas State University

A variety of modalities are available for companies to work with students. A company may indirectly fund a student’s experience by sponsoring a research project in a lab where undergraduate or graduate students work. Alternatively, a company may engage more directly with students through a capstone course or an internship. This session provided an overview of the key takeaways from UIDP’s recent work on contracting issues involving students.

Takeaways:

It is critical to support practitioners who work with students in research as they face a range of challenges (payment for work, insurance coverage, managing confidentiality and IP, etc.).

The overarching goal is to help students in their learning experiences by collaborating with companies/industry.

From the university side, **a concierge approach is needed** so industry can easily engage with the university and its students.

Breakout Session #1
Student and Contracting
Considerations



PAUL LOWE, KANSAS STATE UNIVERSITY

Princeton partners with UNCF, HBCUs to expand research and innovation

Princeton University is partnering with UNCF (United Negro College Fund) and five HBCUs to launch a groundbreaking program designed to enable research collaborations between Princeton faculty and their peers at HBCUs.



Princeton researchers and researchers from Howard University, Jackson State University, Prairie View A&M University, Spelman College and the University of Maryland Eastern Shore will co-lead research projects funded by Princeton University through its new Princeton Alliance for Collaborative Research and Innovation (PACRI).

“Collaboration is a powerful force for new ideas and creativity in research and scholarship,” said Princeton’s Dean for Research Pablo Debenedetti, the Class of 1950 Professor in Engineering and Applied Science and professor of chemical and biological engineering. “By creating a mechanism that encourages faculty from Princeton and HBCUs to work together, we hope to spark the creation of new teams of researchers that bring together people with different perspectives, experiences and expertise. The potential to generate new knowledge and discoveries across a wide range of disciplines is very exciting.”

The initiative’s aim is to fund multiple collaborative projects between Princeton and each partnering institution. Projects from all disciplines are encouraged. Princeton anticipates expanding the effort to forge research collaborations with other Minority-Serving Institutions and women’s colleges.

Research teams from Princeton and HBCU partner institutions are invited to submit proposals by June 30, 2022.

Learn more: research.princeton.edu



PRINCETON'S RODNEY PRIESTLEY AND TOD HAMILTON WITH TASHA INNIS, SPELMAN COLLEGE; APRIL LOVELADY, PRAIRIE VIEW A&M; LAKEISHA HARRIS, UNIVERSITY OF MARYLAND EASTERN SHORE; TERRY ADAMS, HOWARD UNIVERSITY; AND ALMESHIA CAMPBELL, JACKSON STATE UNIVERSITY

Strengthening the STEM Teacher Workforce through Strategic Partnerships

Moderator: Kory Hawkins, Microsoft

Presenters: Jacquita Henderson, Clark Atlanta University; Valeisha Ellis, Spelman College; Michael Marder, UTeach; Kimberly Hughes, UTeach

A strong STEM workforce begins with the preparation of excellent K-12 STEM teachers. Attendees engaged with current data on STEM teacher shortages, what is known about the efficacy of university-based teacher preparation programs like [UTeach](https://uteach.org), and a discussion of the critical role that HBCUs can play in strengthening STEM teaching and learning.

Takeaways:

UTeach is a specialized program dedicated to recruiting and retaining secondary education STEM teachers. Its mission is to focus on solutions to the STEM teacher shortage. The national program (49 universities in 23 states) functions with a community of practices where teachers can collaborate and network to solve problems.

The number of STEM teachers in the United States has been declining. Fewer teachers in STEM impacts recruitment of both STEM students in higher education and future STEM teachers. STEM teachers fill the pipeline needed to close the technology gap we face in recruiting for the workforce as well as the research and innovation enterprise.

A reason for declining numbers of STEM teachers is that universities are pulling back on their commitment to prepare students to teach. HBCUs, along with other institutions of higher learning, have a critical role to play in strengthening programs that develop tomorrow’s STEM teacher workforce.

Research Intelligence Tools for Building Partnerships, Narratives, and Enterprises at HBCUs

Moderator: Kathy Lynch, Yale University

Presenters: Daniel Calto, Elsevier; Art Ellis, Elsevier; Sherine Obare, North Carolina A&T University and UNC Greensboro

Research intelligence tools can provide valuable insights from global bibliometric databases. This session highlighted HBCU institution collaborations – individually and in aggregate – with regional, national, and international academic institutions and with industrial partners through their joint scholarly publications. The significant contributions that HBCUs make to the [United Nations Sustainable Development Goals \(SDGs\)](https://www.un.org/sustainabledevelopment/) through their scholarly outputs were presented. These research contributions can be used to create compelling narratives for securing additional resources for HBCUs from a broad range of funding sources and to communicate the societal impact of research conducted at these institutions. This can lead to new opportunities and potential partners for HBCUs to enhance and grow their research enterprises.

Takeaways:

There is a need to change the narrative on reviewer bias in publication. Knowing some of the data and processes underlying citation visibility may be useful for institutions to leverage.

Joint publication with a corporation raises visibility for the institution. The average number of citations of a paper written with corporate and academic authors is 2.2 times the average. Only 4.7% of all papers have joint authorship. This decreases dramatically with HBCUs (2.8%), so there is ample opportunity to increase joint authorship and increase citations.

Elsevier has an internal intelligence tool that can be used by staff and research leadership to drill into what faculty are doing. It can be used to engage alumni, identify and connect with companies, etc. The tool can provide information about:

- » Who your faculty is partnering with, both internally and externally;
- » New centers and new institutes being developed;
- » New funding proposals and opportunities for research; and
- » Opportunities for international collaboration.



PHILIP LOEW, ACTIVATE;
RAGHUPATHY SIVAKUMAR, GEORGIA INSTITUTE OF TECHNOLOGY;
CRAIG GREEN, CARBICE CARBON

Conclusion

Mission in Motion 2022 evolved from a strong interest in mutual engagement for research and program advancement among representatives in industry, R1 universities, and HBCUs. There are myriad ways to engage across the partnership continuum that provide benefit to all parties. Long-term, holistic engagement holds the promise of the greatest reward for investment. Mission in Motion enabled robust discussion around the common goals, barriers, and a number of success stories, but also underscored the need for more conversations and future convenings. Sign up for updates at uidp.org, and make plans to join us for Mission in Motion 2023.

Improving DEI Representation along the Entrepreneurship Pipeline

Moderator: Christine Gemelli, Raytheon Technologies

Presenters: Ranulfo Allen, Activate; Philip Loew, Activate; Raghupathy Sivakumar, Georgia Institute of Technology; Craig Green, Carbice Carbon

The Activate Fellowship provides a secure path for scientists and engineers to reinvent the world by bringing their breakthrough research to market. Activate is committed to making the Activate Fellowship more representative of the nation's race and gender diversity. As a part of its strategy to increase representation of underrepresented minorities in science entrepreneurship, Activate is introducing a pre-doctoral fellowship program in which undergraduate STEM students are exposed to entrepreneurship by working directly with fellows in their companies. With a panel composed of representatives from regional expansion, recruiting, and mentorship teams, this session brought awareness to this new endeavor in addition to other efforts to improve DEI representation along the entrepreneurship pipeline.

Takeaways:

Entrepreneurship as a career option needs to be introduced earlier in school. Introducing students to entrepreneurship earlier on in the pipeline—as early as freshman or sophomore year—can have a tremendous impact on what they decide to do after graduation.

Fundamental science taught in schools is best supplemented by experiential learning. The proposed Translational Research Program by Activate allows students and recent graduates to apply what they learned by working closely within one of its startup companies.

Many current internships for students and recent graduates are too short and, at times, at the surface level. Activate's proposed year long program- along with a stipend and a network of mentors and additional resources- may be two critical value adds that current internships do not provide enough of.



LUWANDA JENKINS, 1890 UNIVERSITIES FOUNDATION

Further Reference

Guiding Principles of Successful U-I Collaborations

Institutional Missions Define the Scope of Potential Collaborations – A successful university-industry collaboration should support the mission of each partner. Any effort in conflict with the mission of either partner will ultimately fail.

A Long-Term Relationship is the Desired End State – Institutional practices and national resources should focus on fostering appropriate long-term partnerships between universities and industry.

Establish a Framework that Encourages Long-Term University/Industry Collaborations – Universities and industry should focus on the benefits to each party that will result from collaborations by streamlining negotiations to ensure timely conduct of the research and the development of the research findings.

UIDP Contract Accords: Understanding issues in university-industry sponsored research contracts

Each of the 17 [UIDP Contract Accords](#) identifies a common area that requires clarity and forethought in university-industry sponsored research contracts. The Accords provide practical guidance and insight into how parties can address topics in mutually beneficial ways.

The UIDP Contract Accords provide guidance for:

- Good Faith in Fair Dealing
- Statement of Work
- Liability, Indemnification, and Warranties
- Publication
- Other Research Results
- Background Intellectual Property
- Foreground Intellectual Property
- Export Control
- Copyrights
- Disclosure and Protection of Confidential Information
- Material Transfer Agreements
- Gifts
- Budgeting
- Data
- Conflict of Interest
- Software

Additional Resources for University-Industry Collaboration

Archived webinars, project materials and publications, podcasts, and survey results are publicly available in the UIDP Resource Center at [uidp.org](#), including the selection below:

- Accelerated Clinical Trial Agreement (ACTA)
- Case Studies in U-I Collaboration
- Five Ways to Nail Industry Presentations
- Guiding Principles for U-I Endeavors
- Ideas to Innovation: Healthcare Resilience
- Ideas to Innovation: Service Innovation
- Partnership Continuum
- Principled Partnerships Quick Guide
- Researcher Guidebook and Quick Guide
- U-I Connector Career Paths: Crossing Sectors, Creating Impact
- U-I Engagement Outside Major Metropolitan Areas and Megacities Toolkit for Action: Identifying Issues and Finding Solutions
- UIDP Perspectives Series



THERESA MAYER, PURDUE UNIVERSITY;
VICTOR MCCRARY, THE UNIVERSITY OF THE DISTRICT OF COLUMBIA



Strengthening
University-Industry
Partnerships

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Our Mission: The UIDP supports mutually beneficial university-industry collaborations by developing and disseminating strategies for addressing common issues between the two sectors.

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