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Inclusive Research Advancement: Why Collaboration With HBCUs Matters

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Abstract

Inclusive research is conceptualized as systematic discovery that is valid, reliable, useful, and meaningful for either the broadest range of target groups or explicitly-identified target groups. Engineering design flaws continue to arise due to ethnocentric research practices, such as algorithms that fail to recognize darker skinned persons and ill-fitting safety belts derived from gender-biased data. Lack of inclusive and culturally-responsive research slows progress and advancements in science, computing and engineering, and in fact, could endanger certain intended users. We contend that collaboration with HBCUs may enhance other researchers' inclusive research capabilities and minimize research flaws accounting for some of the problems of bias in research. As of 2017, there are 107 Historically Black Colleges and Universities (HBCUs) in the USA. Prospective collaborators may hold misconceptions about the quality and rigor of HBCU faculty and the research programs. There are opportunities for institutions in and outside of the USA to collaborate with HBCUs to leverage advanced HBCU faculty technical expertise and knowledge of inclusive and culturally-competent research. Yet, collaborations and equitable partnerships have not been growing as expected. We will discuss key concepts associated with equitable, fair, and ethical collaborations with HBCUs to support inclusive research.

Keywords
Inclusive research excellence, HBCUs, culturally-responsive research, implicit bias, differential impacts

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Biographies

Tonya Smith-Jackson is currently serving in a rotational position at the National Science Foundation (NSF/CISE Directorate/IIS Division). The presentation topic is based on some of her work associated with the Center for the Advancement of STEM Leadership, which is funded by the National Science Foundation. Before coming to NSF, she served as Professor and Chair of the Department of Industrial and Systems Engineering at NC A&T State University. She is also director of the Human Factors Analytics Lab and co-director of the Cyber-Human Analytics Research for the Internet of Things (CHARIoT) lab. She earned her BS degree in psychology from the University of North Carolina at Chapel Hill and holds an interdisciplinary Master of Science degree from NC State University in Industrial Engineering and Psychology; her doctoral degree is in Psychology/Ergonomics. She is Certified Professional Ergonomist. She has conducted research in usability engineering, cognitive ergonomics, and sociotechnical systems applied to cyber-human systems, systems safety, and training systems design. Research sponsors include NSF, National Institutes of Health, Department of Defense, and private industry (UPS, Toshiba). Prior to academia, she worked in industry and for the federal government in the USA and abroad. She is a member of IISE, HFES, ASEE, and INCOSE.

Fay Cobb Payton is currently serving in a rotational position at the National Science Foundation (CISE Directorate/CNS Division). She is also a Full Professor (with Tenure) of Information Technology/Systems at North Carolina State University and is named a University Faculty Scholar for her leadership in turning research into solutions to society's most pressing issues. She directs funded research efforts associated with myHealthImpactNetwork and ChangeComputerScience. She conducts research in healthcare IT/informatics and disparities; data management/science, social media use, STEAM + Arts, online communities; broadening participation in IT/computing and STEM education and workforce participation. Research sponsors include NSF, National Institutes of Health, Kenan Institute, NC State Foundation and private industry (KPMG, AT&T, and others). She earned a Ph.D. in Information & Decision Systems from Case Western Reserve University. She holds a MBA from Clark Atlanta University in Decision Sciences. She completed the Atlanta University Center Dual Degree Engineering Program with a BS in Industrial and Systems Engineering from Georgia Institute of Technology and a BA in Accounting (with a minor in Mathematics) from Clark Atlanta University. Prior to joining academe, she worked in corporate IT, engineering and consulting at several US organizations. She is a member of ACM and IEEE.