



The Graduate School

Presents

Inaugural Graduate Research Workshop

Friday, April 30, 2021

9:00 AM – 4:00 PM

Virtual Only ~ Microsoft Teams

Morning Ceremony Kick Off @ 9:00 am

- 9:30 AM Session 1: Leadership & Special Education
- 10:40 AM Session 2: Education Research
- 10:40 AM Session 3: Session 3 Data Science & Data Visualization
- 12:30 PM Session 4: Virtual Reality
- 1:30 PM Session 5: Augmented Reality & Mobile Applications

Afternoon Ceremony Panel Discussion & Awards @ 2:30 pm

Dr. Aminta H. Breaux, President, Bowie State University

Dr. Carl Goodman, Provost and Vice President Academic Affairs, Bowie State University

Dr. Cosmas U. Nwokefor, Dean, Graduate School, Bowie State University

Dr. Mathias Mbah, Assistant Dean, Graduate School, Bowie State University

History of Bowie State University

Bowie State University is an outgrowth of a school opened in Baltimore, Maryland, by an organization dedicated to offering educational opportunities that the state failed to provide for its black citizens.

From those humble beginnings, Bowie State has become a comprehensive university, offering 23 undergraduate majors, 20 master's degree programs, 16 specialty certificates, and two doctoral programs in a broad range of disciplines. Bowie State University continues to build on its legacy of providing access to a high-quality education.

Founding of the First School

The Baltimore Association for the Moral and Educational Improvement of the Colored People was organized in 1864 by 46 men, comprised of businessmen, lawyers, clergymen and Quakers, committed to opening schools to educate the state's newly emancipated citizens. One of those men was Joseph M. Cushing, an outspoken champion for the education of the black population.

As chairman of the Educational Committee for Maryland's Constitutional Convention in 1864, Cushing chastised the committee's refusal to fund schools for black people: "There will come a time when this state will be forced by public opinion to provide means for educating our colored population." The association opened its first Baltimore school, School #1, on January 9, 1865, in the African Baptist Church in Crane's Building on the corner of Calvert and Saratoga streets. The school offered courses in the elements of education. Courses to train teachers were added in 1866.

The facility was woefully inadequate. In 1867, with the aid of the Freedmen's Bureau, the Quakers of England and others, the Baltimore Association purchased and renovated the Old Friends Meeting House at the corner of Saratoga and Courtland streets to house the Baltimore Normal School for Colored Teachers.

Move to Bowie

After repeated petitions from the Baltimore Normal School trustees, the state legislature authorized the Board of Education to assume control of the school in 1908 and re-designated it as Normal School No. 3, finally fulfilling the dream of Cushing and the Baltimore Association. By 1910, the state decided to relocate the school to Bowie, Maryland, purchasing a 187-acre tract formerly known as Jericho Farm dating to 1716. The school opened at the new location in 1911 with about 60 students and Don Speed Smith Goodloe as the first black man to head the school as principal. In 1914, its name changed to the Maryland Normal and Industrial School at Bowie.

Under President Leonidas James, the school began a two-year professional curriculum in teacher education in 1925, which expanded to a three-year program in 1931. A four-year program to train elementary school teachers was introduced in 1935, and the school was renamed the Maryland Teachers College at Bowie in 1938.

Teacher education continued to expand under the 25-year tenure of President William Henry. The institution established programs to train teachers for junior high school (1951) and secondary education (1961) and advanced toward becoming a liberal arts college.

Transition to a State Liberal Arts College

The Maryland State Legislature authorized the college to become Bowie State College in 1963, following the establishment of a liberal arts program. New majors in English, history and general social science were added, expanding offerings beyond teacher education.

Under President Samuel Myers, the college established its first graduate degree program, offering the Master of Education in 1969. The first director of the graduate division was Dr. J. Alexander Wiseman, a graduate of the Maryland Teachers College at Bowie and the first African-American to earn a doctoral degree from the University of Maryland, College Park.

Emergence as a Comprehensive University

In 1988, Bowie State College became Bowie State University under President James Lyons, reflecting significant growth in academic programs, enrollment and community service. On the same day, the university also became one of the member institutions of the newly formed University System of Maryland.

Bowie State University gained recognition as a leader in the education of science, technology, engineering and mathematics (STEM) disciplines. In 1995, Bowie State won an 11-year, \$27 million award from the National Aeronautics and Space Administration/National Science Foundation, becoming one of only six national Model Institutions for Excellence in STEM.

Today's Bowie State University

Bowie State University ranks among the nation's top comprehensive universities, cultivating next-generation leaders by providing opportunities for students to discover their strengths through focused academic experiences and opportunities to tackle real-world problems.

Now more than ever, Bowie State University is committed to preparing students for success in a highly technological, global society.

The Graduate School Administration



PRESIDENT
Dr. Aminta Breaux



PROVOST/ VP for ACADEMIC AFFAIRS
Dr. Carl Goodman



DEAN, THE GRADUATE SCHOOL
Dr. Cosmas U. Nwokefor



ASST. DEAN, THE GRADUATE SCHOOL
Dr. Mathias Mbah



Greetings,

Welcome, and thank you for your support for the inaugural Bowie State University Graduate Research Workshop! On behalf of the entire campus community, I extend my congratulations to our students, faculty and staff of the Graduate School at BSU on their scholarly activities and contributions to the Science, Technology, and Engineering and Math (STEM) fields.

Today, we take time out to say, “well done” to everyone in the BSU Graduate School. I am proud of all they have achieved and for their hard work and determination in creating a virtual workshop that will offer a chance for students to enrich valuable skills across STEM fields for a global workforce.

The panelists and faculty members taking part in this workshop are essential to the success of each of our graduates and their research. This workshop represents a great opportunity for our Bulldogs to refine their communication skills and career preparedness, and to demonstrate their outstanding achievements during this extraordinary year. Throughout the year, our graduates have confronted numerous challenges presented by the ongoing pandemic, yet throughout they have risen to the occasion and remained Bowie **BOLD**—bright, persistent and determined.

The U.S. Bureau of Labor Statistics projects that occupations in the STEM field are expected to grow 8% by 2029, compared to 3.7% for all occupations. It is, therefore, vital to the success of our graduates that they gain the skills and experience essential for greater innovation, creativity and agility in this new normal and an ever-changing world.

Again, thank you to all of the participants attending today’s workshop and for your ongoing support of our graduates, their research, and contributions to the STEM fields at Bowie State University to help create a better tomorrow for us all!

Sincerely,

Aminta H. Breaux

Keynote Speaker

Dr. Cosmas U. Nwokefor



Dr. Cosmas U. Nwokefor is a full professor of Mass Communication at Bowie State University where he currently serves as the Dean of Graduate School. He has served as a Provost Fellow and Assistant Provost for Graduate Studies at Bowie State University. Prior to his current position, he has served as the Assistant Dean and Dean of the College of Arts and Sciences respectively as well as the Chair of the Department of Communication. His professional experiences include leadership training at Harvard University. He has participated at the Oxford Roundtable workshop in Oxford, London, where his paper was among the top ten papers that was published on the journal forum on public policy on-line, spring 2009 (<http://forumonpublicpolicy.com>).

Dr. Nwokefor also presented a paper at the 2013 Oxford Education Research Symposium in London. He has conducted research in the areas of development communication, new communication technologies and Media role in development in Africa, conundrum of autism, and retention studies. Currently, he serves as the Council of Historically Black Graduate Schools President. He did serve also as the reviewer of CHBGS /UMI ProQuest award committee chair for dissertation submissions from (CHBGS) member institutions. He also served as the vice president of the Council of Historically Black Graduate Schools, and its secretary for three years.

Dr. Nwokefor was the past Associate Editor of the Journal of African Communication (JAC). He has been involved as a co-PI in some funded and unfunded grants among which are the multimillion dollar project learning community (Project LINC), National Science Foundation (NSF) proposal titled “Prince George’s Partnership for Innovation and a 4.5 million dollar National Science Foundation (NSF) grant titled “Training Institute for Practicing Mathematics and Sciences Teachers. Dr. Nwokefor has received numerous awards such as the 6th time awardees of Who’s Who Among America’s Teachers’; Who’s Who in the Media and Mass Communications; Who’s Who in American Education; Who’s Who in America; Who’s Who in the East; Who’s Who in the World; He received an award as a Member of the International Authors and Writers; and Citizen Ambassador Program. Dr. Nwokefor is a Pointer Institute for Media, American Press Institute and Capital/ABC Fellow. He has published nine books, six book chapters and is the author of numerous scholarly peer reviewed journal articles. Dr. Nwokefor reviewed John Merrill’s book, **Global Communication**.

Dr. Nwokefor received a National Certificate in Education (Pedagogy) at the prestigious Alvan Ikoku Federal College of Education, Owerri, Nigeria, a bachelor’s degree in Journalism from Howard University in 1986, masters in Mass Communication in 1990 and a doctorate in Mass Communication from Howard University in 1992.

PROGRAM

Welcome:

Dr. Uchenna Onuzulike
Professor
Department of Communications
Bowie State University

Opening Remarks:

Dr. Carl Goodman
Provost & VP
Academic Affairs
Bowie State University

Introduction of Keynote Speaker & Event Overview:

Dr. Sharad Sharma
Professor
Department of Computer Science
Bowie State University

Keynote Speaker

Dr. Cosmas U. Nwokeafor
Dean, Bowie State University ~ Graduate School

BSU GRW 2021 Presenters:

Ibeawuchi Anokam	Veronica Boateng
Sri Teja Bodempudi	Aaron Curry
Cynthia Farmer	Emerald Fulmore
Deborah Higdon	Gwendolyn Jefferson
Syltinsy Jenkins	Aishwarya Reehl
James Stigall	Rachel Thompson

BSU GRW 2021 Panel Moderators:

Dr. Dwight Ellis Professor, Department of Communications Bowie State University	Dr. Ann Hilliard Associate Professor, Program Director, Department of Educational Studies & Leadership, Bowie State University
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BSU GRW 2021 Panelists:

Dr. Hyacinth Anucha	International Academic Research Consultant
Dr. Harriett Kargbo	Associate Professor & Chair Department of Leadership Coppin State University
Dr. Brenda Alston Mills	Professor Emeritus & Diversity Coordinator North Carolina State University
Dr. Milton Walters	Chancellor-Gaia Business School, Guatemala

Panel Discussion Topics:

- Understanding STEM careers in a global context and identifying international research and education opportunities.
- A panel discussion on current research topic in academia and industry.
- Building research skills and developing focus on employment searches and retention.

Awards Ceremony & Closing Remarks:

Dr. Cosmas U. Nwokeafor Dean, Graduate School	& Dr. Sharad Sharma Professor Department of Computer Science
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Graduate Research Workshop

Event Access Links & Sessions Start Time

Morning Session Access (9:00 AM – 9:30 AM)

- Opening & Welcoming Remarks
- Bowie State University Inaugural Graduate Research Workshop Overview
- Keynote Speaker

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Afternoon Session Access (2:30 PM – 4:00 PM)

- Panelist Discussion
- Bowie State University Inaugural Graduate Research Workshop Awards
- Closing Remarks

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Sessions Access

9:30 AM – 2:30 PM

Please visit link for individual session workshops during 1-hr block period or call-in (audio only)

Session 1: Leadership & Special Education			
SESSION 1	Candidate 1	Candidate 2	Candidate 3
9:30 AM – 10:30 AM	<p style="text-align: center;">Cynthia Farmer</p> <p><i>“Factors That Impact the Retention of Elementary Teachers of Color in Title One and non-Title One Schools in an Urban School District in a Mid-Atlantic State”</i></p>	<p style="text-align: center;">Emerald Fulmore</p> <p><i>“A Seat at the Athletic Administration Leadership Table: Collective Narratives From African American Women Who Beat the Odds”</i></p>	<p style="text-align: center;">Gwendolyn Jefferson</p> <p><i>“A Case Study: Leading for Special Education Compliance Through the Lens and Experiences of a Special Education Certified Principal”</i></p>
<p>https://teams.microsoft.com/l/meetup-join/19%3ameeting_MTJjOGI4ZDgtNzYwMi00Y2E3LTk0YjUtYmRiYWQxZTIjNTEw%40thead.v2/0?context=%7b%22Tid%22%3a%2294728e82-9ce4-4d91-99c9-4adbe58ed910%22%2c%22Oid%22%3a%221cb6ab03-f37d-4519-92b7-64bfb7faef57%22%7d</p> <p>Or call in (audio only) +1 240-468-7910 United States Phone Conference ID: 285 329 669#</p>			

Session 2: Education Research

SESSION 2	Candidate 1	Candidate 2	Candidate 3
10:40 AM – 11:40 AM	Aaron Curry <i>“Rethinking Our Homework Practices”</i>	Rachel Thompson <i>“A Study Investigating Pupil Personnel Workers Perspectives of Restorative Justice Approaches”</i>	Gwendolyn Jefferson <i>“Piano Students ‘Perspectives and Experiences with Remote Piano Instruction”</i>

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Or call in (audio only)

+1 240-468-7910 United States
 Phone Conference ID: 749 232 758#

Session 3: Data Science & Data Visualization

SESSION 3	Candidate 1	Candidate 2	Candidate 3
10:40 AM – 11:40 AM	Aishwarya Reehl <i>“Data Visualization of Baltimore Crime Data Using Virtual Reality”</i>	Veronica Boateng <i>“Tracking of Individualized Personal Health Record Using Blockchain”</i>	Syltinsy Jenkins <i>“Frequent Keyword Analysis for NASA's Planetary Data Systems Small Bodies Node”</i>

https://teams.microsoft.com/l/meetup-join/19%3ameeting_YjU1ZDU2ZGEtMTM5Mv00NDAXLTgyZjctZjFhNDg0MjY2ZTdl%40thead.v2/0?context=%7b%22Tid%22%3a%2294728e82-9ce4-4d91-99c9-4adbe58ed910%22%2c%22Oid%22%3a%221cb6ab03-f37d-4519-92b7-64bfb7faef57%22%7d

Or call in (audio only)

+1 240-468-7910 United States
 Phone Conference ID: 748 398 898#

Session 4: Virtual Reality

SESSION 4	Candidate 1	Candidate 2	Candidate 3
12:30 PM – 1:30 PM	Sri Teja Bodempudi <i>“Extended Reality (XR) Application for Building Evacuation Using HoloLens”</i>	Deborah Higdon <i>“Perceptions of African American Male and Female Freshmen on the Mathematical Achievement Gap”</i>	James Stigall <i>“Evaluation of Virtual Reality Instructional (VRI) Modules for Teaching Basic Programming Concepts”</i>

https://teams.microsoft.com/l/meetup-join/19%3ameeting_YTJhZGRhMTAtYWVhNS00MDQ1LTlhMDMtM2IxMmNiYTY4NWE5%40thread.v2/0?context=%7b%22Tid%22%3a%2294728e82-9ce4-4d91-99c9-4adbe58ed910%22%2c%22Oid%22%3a%221cb6ab03-f37d-4519-92b7-64bfb7faef57%22%7d

Or call in (audio only)

+1 240-468-7910 United States

Phone Conference ID: 492 444 806#

Session 5: Augmented Reality & Mobile Applications

SESSION 5	Candidate 1	Candidate 2	Candidate 3
1:30 PM – 2:30 PM	Ibeawuchi Anokam <i>“Bulldog Alert: Alert and Notification Application Development”</i>	Syltinsy Jenkins <i>“Mobile AR COVID-19 Preparations Reminder”</i>	Veronica Boateng <i>“Mobile Augmented Reality Application for COVID-19 Preventive Measures”</i>

https://teams.microsoft.com/l/meetup-join/19%3ameeting_YTI5NDQ1ZjYtNmJmMi00ZDhhLWI5YWItNmZiMTgyOGY2NTkz%40thead.v2/0?context=%7b%22Tid%22%3a%2294728e82-9ce4-4d91-99c9-4adbe58ed910%22%2c%22Oid%22%3a%221cb6ab03-f37d-4519-92b7-64bfb7faef57%22%7d

Or call in (audio only)

+1 240-468-7910 United States

Phone Conference ID: 641 213 221#

Inaugural Graduate Research Workshop 2021

Session Judges

Session 1: Leadership & Special Education



DR. JACQUELINE SWEENEY

Professor

Masters of Arts in Reading Education
Department of Teaching, Learning, and Professional
Development

COLLEGE OF EDUCATION
Bowie State University



DR. WASEEM MAZHER

Professor

Masters of Education in Special Education
Department of Teaching, Learning, and Professional
Development

COLLEGE OF EDUCATION
Bowie State University

Session 2: Education Research



DR. CUBIE BRAGG

Professor

Masters of Arts in Counseling Psychology
Department of Counseling

COLLEGE OF EDUCATION
Bowie State University



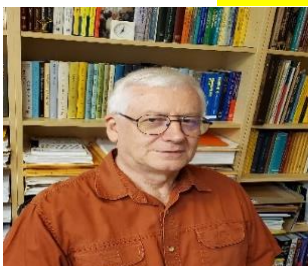
DR. CYNTHIA TAYLOR

Professor

Masters of Education in School Counseling
Department of Counseling

COLLEGE OF EDUCATION
Bowie State University

Session 3: Data Science & Data Visualization

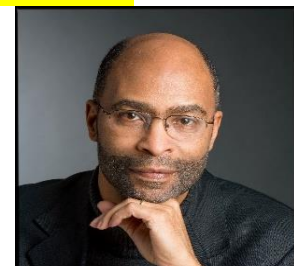


DR. ROMAN SZNAJDER

Professor

*Masters of Arts in Applied Computational
Mathematics*

COLLEGE OF ARTS & SCIENCES
Bowie State University



DR. GRANVILLE SAWYER

Professor

Masters of Business Administration

COLLEGE OF BUSINESS
Bowie State University

Inaugural Graduate Research Workshop 2021

Session Judges

Session 4: Virtual Reality



DR. DAVID ABRAHAMS
Professor
Masters of Public Administration

COLLEGE OF BUSINESS
Bowie State University



DR. TEMPTAOUS MCKOY
Professor
Masters of Arts in English

COLLEGE OF ARTS & SCIENCES
Bowie State University

Session 5: Augmented Reality & Mobile Applications



DR. EDWARD NEWSOME, JR.
Professor
Department of Educational Studies and Leadership

COLLEGE OF EDUCATION
Bowie State University



DR. KIMBERLY DANIEL
Professor
Masters of Arts School Psychology
Department of Counseling

COLLEGE OF EDUCATION
Bowie State University

Graduate Research Workshop Panelist Members

Panel Moderators	Professional Title
Dr. Dwight Ellis	Professor, Department of Communications, Bowie State University
Dr. Ann Hilliard	Associate Professor, Program Director for Graduate Programs in the Department of Educational Studies and Leadership, Bowie State University

Panelist	Professional Title
Dr. Hyacinth Anucha	International Academic Research Consultant
Dr. Harriett Kargbo	Associate Professor & Coordinator for Department of Leadership, Coppin State University
Dr. Brenda Alston Mills	Professor Emeritus & Diversity Coordinator, North Carolina State University
Dr. Milton Walters	Chancellor, Gaia Business School, Guatemala

Panel Topics
Understanding STEM careers in a global context and identifying international research and education opportunities.
A panel discussion on current research topic in academia and industry.
Building research skills and developing focus on employment searches and retention

BOWIE STATE UNIVERSITY
GRADUATE RESEARCH WORKSHOP 2021

Abstract 1:

Factors that Impact the Retention of Elementary Teachers of Color in Title One and Non-Title One schools in an Urban School District in a Mid-Atlantic State

PRIMARY AUTHOR: Cynthia E. Farmer

PRIMARY AUTHOR'S INSTITUTION: Bowie State University

Effective teachers do not stay in the profession long. A significant number of teachers leave the profession in less than five years. Retaining teachers is a dilemma in education. Factors related to teacher retention such as teacher quality, teacher preparation, and teacher recruitment were examined throughout this study. With the exodus of novice teachers, this study focused on specifically teachers of color who are making the decision to no longer work in the public school system.

To gain relevant and authentic insights from novice teachers of color, a narrative qualitative approach was used. A Focus Group of 12 novice teachers who have worked between three to five years in one of two public teaching settings: Title One or Non-Title One Schools was formed. Each of the 4 research questions related to a factor of teacher retention: teacher quality, teacher preparation, and teacher recruitment. Interview questions were aligned to the research questions. A qualitative software, Dedoose was used to organize, manage, and code the data from individual interviews and discussions. From the discourse with these frontline workers in education, the researcher noted various themes such as: funding, partnerships, opportunities, mental support, value, and freedom.

The deliberate dialogue of teachers of color produced deliberate action steps that policy makers can take. Policy makers and district leaders need to know that retention is an active process, ongoing, and intentional. There is a need for a clear, consistent continuum of support throughout an individual's teaching tenure. Each school system needs a systematic approach to teacher retention for teachers of color. This must be implemented with fidelity across school settings.

Further research needs to be on expanding the Focus Group to Latinx and Asian teachers of color. A spotlight on men of color and their impact in the classroom should be studied further. The responsibilities of administrators could be examined to determine how their role has an impact on teacher retention. Policy makers need opportunities to get out into the field, observe, and hold relevant, intentional conversations with teachers of color to disrupt teacher turnover, and keep effective teachers in classrooms to ensure student success.

References: 1. Borman, G. D., & Dowling, N. M. (2008). Teacher attrition and retention: A meta-analytic and narrative review of the research. *Review of Educational Research*, 78(3), 367-409. 2. Mills, G., & Gay, L. R. (2019). *Educational Research: Competencies for Analysis and Application*. New York, NY: Pearson

BOWIE STATE UNIVERSITY
GRADUATE RESEARCH WORKSHOP 2021

Abstract 2:

A SEAT AT THE ATHLETIC ADMINISTRATION LEADERSHIP TABLE:
COLLECTIVE NARRATIVES FROM AFRICAN AMERICAN WOMEN WHO BEAT
THE ODDS

Name: Dr. Emerald Brenette Fulmore

Institution: Bowie State University

In 2018, the National Collegiate Athletic Association reported that only 23 African American women held the position of athletic director among 4-year colleges and universities in the United States. The NCAA also reported 90 Black males, 206 White females, and 745 White males holding the athletic director role at the HBCU and PWI level combined (Powell, 2020). In 2019, 26 Black females, 89 Black males, 212 White females and 739 White males held the athletic director position and in 2020, 30 Black females, 87 Black males, 224 White females and 722 White males held the athletic director position.

For African American women, the ascent to the top position in collegiate athletics is disproportionate compared to their male and White female counterparts. Most African American women on the collegiate level began their careers as student-athletes, assistant/associate athletic directors, compliance and senior woman administrators. They progressed through the athletic ranks, even though there were very few women of color in that role. Women of color who are knowledgeable in the athletic administrative field could be essential for future leadership roles (Powell, 2020).

This study gathered the stories, experiences, and perceptions of African American female athletic directors of 4- year colleges and universities who pursued the administrative career paths. The researcher employed a qualitative methodology from a narrative inquiry approach (Clandinin & Connelly, 2000). Interviews provided insight into the participant's career path and told the story of their lived experiences. Specifically, this research explored how the participants viewed their professional journeys, athletic administrative career paths, and future professional goals beyond the athletic director role. The participants additionally provided insights on the position of athletic director, the barriers faced within the NCAA membership, and their leadership styles. In reflecting on their professional journeys, the women cited the importance of networking, internships, and being surrounded by supportive mentors

BOWIE STATE UNIVERSITY GRADUATE RESEARCH WORKSHOP 2021

Abstract 3:

Title of Dissertation A Study Investigating Pupil Personnel Workers Perspectives of Restorative Justice Approaches

Name: Rachel A. Thompson

Institution: Bowie State University

This study aimed to explain Restorative Justice Practices' use by pupil personnel workers in a Mid-Atlantic state. Education is essential to life, giving the ability to make significant life decisions about the choices available. The Fifth Amendment provides students with the right to free public education, and that right cannot be taken away without due process of the law (U.S. Const. amend. 5.4). Students are learning and developing constantly. Students make mistakes and break school rules, and this is a part of learning. Educators are tasked with teaching and guiding students' growth and development, which is behavior development (Blood & Thorsborne, *The Challenge of Culture Change: Embedding Restorative Practice in Schools*, 2005).

In a Mid-Atlantic State Department of Education, there are pupil personnel workers, who are trained specialists who act as a motivating force to remove student achievement barriers (Mid-Atlantic Department of Education, 2020). The pupil personnel workers are strategically located within school districts to allow pupil personnel workers to act as a referral source and liaison between internal departments, outside agencies, and community resources.

Ideally, all students are academically progressing and following all the rules and not being suspended. In October 2019, a Mid-Atlantic state gave all school districts guidance to address and reduce discipline disproportionality. Thirty thousand seven hundred eighty-eight of the students suspended out-of-school were suspended for nonviolent offenses. If administrators, teachers, and staff are not implementing Restorative Approaches, it will adversely impact student academic achievement and graduation rates. The expectation is that all school staff understand that imperfect and difficult students are included in school and are provided the same education level. A school can approach school discipline in a preventive manner, supportive manner, or corrective manner, which sets the school climate.

Suspension rates across the United States have continued to climb since the 1970s (Rumberger & Losen, 2016). The removal of students from their academic settings can be perceived as harsh and harmful for students. Those who receive out-of-school suspensions, expulsions, or removal to an alternative school suffer humiliation, lower confidence in their abilities, frustration, and resentment. Students' academic progress is hindered when students are not present for instruction or are not engaged in academic discussions with their peers (Rumberger & Losen, 2016). Students who suffer academically act out in class or become truant. Restorative Justice Practices and approaches are strategies widely used and geared toward restoring and building relationships. Restorative Justice Practices are used to teach students to self-regulate and implement self-discipline. The strategies contribute to the school building's discipline or code of conduct (Amstutz & Mullet, 2015). Restorative Approaches have been implemented in the Mid-Atlantic state's schools to "create a school climate and culture that is inherently just, racially equitable, and conducive to learning for all students" (Mid-Atlantic State Department of Education, 2019).

This researcher used an explanatory two-phase mixed methods research design to investigate the Restorative Justice constructs utilized by pupil personnel workers to assist with student intervention advocacy within a Mid-Atlantic state. The overarching mixed methods research question the researcher sought to answer is: What is the relationship between the Restorative Justice Practices/Approaches implementation practices of pupil personnel workers in the Mid-Atlantic state and the number of out-of-school suspensions in the Mid-Atlantic state?

This study revealed that pupil personnel workers had not been effectively utilized in school discipline by school districts. There is a need to change policies that encourage student out-of-school suspension for nonviolent actions and low-level offenses. Moreover, there is a need for closer examination of the policies and laws surrounding student suspension

BOWIE STATE UNIVERSITY
GRADUATE RESEARCH WORKSHOP 2021

Abstract 4:

Title A Case Study: Leading for Special Education Compliance Through the Lens and Experiences of a Special Education Certified Principal

Name: Gwendolyn C. Jefferson

Institution: Bowie State University

This single-subject phenomenological case study explored the perceptions of how one principal with special education certification uses her knowledge and skills to lead her staff to comply with special education legislation and mandates. The study presented the perceptions and lived leadership experiences of a special education certified principal. The study identified the preparation, values, and strategies implemented by the participating principal for strong and effective leadership of special education compliance. The study took place in a suburban East Coast public school district at a large, diverse elementary school consisting of students with and without disabilities in general and special education classrooms.

The study was limited to one participating principal. The methods for data collection included a questionnaire, interview questions, and observation of the principal's leadership practices.

The findings included: (a) the participating principal's perceptions and leadership practices for special education compliance reflected strong and effective leadership involving the use of special education knowledge/skills and values for being caring and results-driven, transformational leadership principles for preparation, facilitation, collaboration, innovation, and transactional leadership principles for positive reinforcement; (b) the participating principal's values, leadership practices, and application of acquired special education knowledge and skills led to stakeholders' consistent compliance to special education regulations. Recommendations for practice included: (a) increasing the leadership capacity of principals and administrators for special education compliance via on-going school districts' systemic professional development and (b) using effective special education certified principals as peer coaches for novice, non-compliant, and nonspecial education certified principals.

Recommendations for policies included: (a) state departments, colleges/universities, and school systems changing course requirements for principal certification to include special education coursework and (b) school systems requiring schools with 10% or more students with disabilities and/or school-based special education programs to be led by special education certified principals. Recommendations for research included studies with more participants, including both special education certified and non-certified principals, that explore the viewpoints, preparation, leadership experiences, and relationship between principal preparation and principals' leadership for special education compliance

BOWIE STATE UNIVERSITY
GRADUATE RESEARCH WORKSHOP 2021

Abstract 5:

Title: Rethinking Our Homework Practices

Author: Aaron Curry Co author: Dr. Akeda Pearson

Homework has been an essential part of education for years. Students have been doing homework in the afternoons for a long time. Teachers assign homework as an extension of what is taught in class. The purpose of homework is to reinforce the material learned during the school day. When assigned correctly, homework can be very beneficial to students.

A problem exists in this though. How much homework is too much homework? Many educators have the idea that assigning students a large amount of homework is beneficial to their learning. However, research says otherwise. Assigning too much homework can actually lead to lower scores and burnout in students. In the research that I conducted, I saw that anxiety was increasing in teens and that this was partly due to an increase in homework. Students are taught to be competitive academically. While this is not a bad thing, it can be taken too far. I found research done by the Chinese National Surveys on Students Constitution and Health that states that, in many cases, excessive homework can lead to higher cases of obesity. In China, children around ages six and seven are thrown into an academically competitive environment. In addition, to the nine hour school day, these young children spend an extra three hours doing homework in afterschool programs. Competition-driven educational programs can cause students to feel overwhelmed. Many educators believe that the more homework students receive, the more students will learn. It is believed that more homework will translate into higher scores on assessments. On the contrary, research shows that excessive homework can lead to lower scores. Students can feel overwhelmed and become disinterested in the subject matter if too much of it is given outside of school hours.

To combat these issues, we need to rethink our homework practices. We can explain the value and purpose of the homework that we assign. As teachers, we need to ensure that our students know the meaning of the homework and how it connects to their lives. Another thing that we can consider is the amount of practice problems/questions students receive. If they can understand the concept after five practice problems, there is no need to give them thirty practice problems. The availability of technology should also be considered when assigning homework. There is a digital divide that exists among students, especially those students in minority communities. Homework that does not require the use of the internet can really benefit students. These assignments may include textbook work, home observations, or short interviews. This can alleviate stress in students. The types and amount of homework must be taken into consideration. Less homework can even improve students' attitudes towards learning. This also helps the family unit as a whole. In the Western Cape Province of South Africa, there was a "no homework" policy that was established. One of the reasons why this policy was introduced is because many parents work until late in the evenings and were not able to help students. Other reasons include the kids being stressed and parents not feeling equipped to help with homework. Homework was replaced with twenty minutes of reading. Student scores did not drop. They were more excited about coming to school. Families had more time to spend together. Boys in the sixth grade even started a book club after school. Attitudes towards school and learning became more positive when this "no homework" policy was put into place. As educators, when we rethink and redo our homework practices, our students will have better attitudes towards learning and higher scores in school.

BOWIE STATE UNIVERSITY
GRADUATE RESEARCH WORKSHOP 2021

Abstract 6:

Data Visualization of Baltimore Crime Data using Virtual Reality
Aishwarya Reehl, Bowie State University,

Visualizing data effectively is critical for discovery process in the age of big data. Data visualization can provide a big help in cracking down criminal activities. Across the world, the law enforcement agencies are making more intensive use of data visualization technologies. In this research we are analyzing the crime data for Baltimore County which will help in visualizing the data in an efficient way especially when the data is numerous. We are interested in finding ways to better understand, perceive and interact with multidimensional data in the field of humancomputer interaction. Crime data provides us a lot of insight on the data points like race, sex, demographics etc. Immersive visualization leads to better understanding and perception of relationships in the data. The objectives of this research is to develop an interactive module that demonstrates the crime statistics across the Baltimore County. The methodology involves combining neural networks predictions with human centric situational awareness and data analytics to provide accurate, timely and scientific strategy in combatting and mitigating the spread of crime in the Baltimore County. The aim is to create Virtual Reality interactive module that shows the map of the Baltimore county and provides a hand-on experience for viewing the criminal activities in the county based on the various attributes like gender, race, age etc. Our hypothesis is that the use of this virtual reality module will lead to better understanding of the criminal activities. In this research, we have incorporated data provided by the Baltimore County government which is refreshed on a regular basis. The proposed module is designed and developed using Unity. The visual analytics provided by this module helps in creating tactical and strategic reports that can be rapidly created for various briefings and studies. This module delivers visually analyzed data to identify patterns and trends for all types of crime in the county. The result of evaluation shows that the VR modules produces better learning and are more engaging. Our results also suggest that users feel more satisfied when using immersive virtual reality data visualization tools and thus demonstrate the potential of immersive data analytics.

Publications: 1. Sharma, S., Bodempudi, S.T., Reehl, A. " Real-time Data Analytics of COVID Pandemic using Virtual Reality, Proceedings of the 23rd International Conference on Human-Computer Interaction (HCI International 2020), Thematic Area: Virtual, Augmented and Mixed Reality, Washington DC, 24-29 July 2021. 2. Sharma, S., Bodempudi, S.T., Reehl, A. " Virtual Reality Instructional (VRI) module for Training and Patient Safety", IS&T International Symposium on Electronic Imaging (EI 2021), in the Engineering Reality of Virtual Reality, Burlingame, California, January 2021. 3. Sharma, S, Bodempudi, S.T., Reehl, A. " Real-Time Data Visualization to Enhance Situational Awareness of COVID pandemic ", Proceeding of the IEEE International Conference on Computational Science and Computational Intelligence (CSCI'20), Las Vegas, Nevada, USA, Dec 16-18, 2020.

Funder Acknowledgement(s): The author acknowledges the Virtual Reality Laboratory at Bowie State University

BOWIE STATE UNIVERSITY
GRADUATE RESEARCH WORKSHOP 2021

Abstract 7:

Extended Reality (XR) Application for Building Evacuation Using HoloLens.
Sri Teja Bodempudi, Bowie State University,

During emergencies communicating in multi-level built environment becomes challenging problem because architectural complexity creates problems with visual and mental representation of a 3D space. The proposed HoloLens application gives a visual representation of a building on campus in 3D space, allowing people to see where exits are in the building as well as creating alerts for anomalous behavior for emergency response such as active shooter, fire, and smoke. It also gives path to the various exits; shortest path to the exits as well as directions to a safe zone from their current position. The extreme reality (XR) application was developed in Unity 3D for Microsoft HoloLens and also is deployed on tablets and smartphones. It is a fast and robust marker detection technique inspired by the use of Vuforia library. Our hypothesis is that our proposed XR application for building evacuation will lead to quicker evacuation time and routes as compared to traditional evacuation. In this XR application way finder methodology is implemented to calculate the shortest and safest path based on the user location in the building. A limited user study was performed for the XR application. The results from the user studies indicated that the XR application was useful in helping people evacuate buildings and can be used as a substitute for 2D evacuation plans. The results from the user studies also indicated that the proposed XR application was useful in helping people evacuate buildings and can be used as a substitute for 2D evacuation plans. In conclusion, this work presents location awareness in multilevel spaces by generating XR visualizations for spatially contextualized communication of evacuation plans. Further work will include implementing a generalized neural network algorithm to link location, markers with target 3D content for a new building.

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Funder Acknowledgement(s): The authors would like to acknowledge the support of the Virtual Reality Laboratory at Bowie State University. This work was funded in part by the ARL Award: W911NF-17-2-0133.

BOWIE STATE UNIVERSITY
GRADUATE RESEARCH WORKSHOP 2021

Abstract 8:

Evaluation of Virtual Reality Instructional (VRI) Modules for Teaching Basic Programming Concepts
James Stigall, Bowie State University

Traditional teaching methods are often times insufficient for students' learning of computer science concepts, which is often times challenging. Two virtual reality instructional modules were developed to teach basic computer science concepts to undergraduate computer science majors. The goal of this research was to design, develop, and evaluate the VRI modules. The objectives of this research were to (1) design and develop the VRI modules for use in immersive and nonimmersive environments and (2) evaluate those VRI modules based on existing frameworks for engagement and learning effectiveness. One of the modules was built to teach object-oriented programming (OOP) and the other was developed to teach two commonly used data structures in computer programming, stacks and queues. The two modules were implemented using the Vizard VR Toolkit and the Python programming language. A non-immersive version of each module was implemented to be compatible with a desktop computer. An immersive version of each module was created to be compatible with the Oculus Rift. The hypothesis developed for this research was that the VRI Modules built will increase the students' knowledge of OOP and stacks and queues. Specifically, users will be properly equipped to incorporate the concepts into the programs that they write. User studies were performed over the course of several semesters to gauge the modules' learning effectiveness and engagement. The studies consisted of students taking a pre-test and post-test and completing a questionnaire based on the Student Assessment of Learning Gain (SALG) and Game Engagement Questionnaire (GEQ) methodology. In one of studies, participants who learned the concepts through traditional means answered 52.5% of the questions correctly on the post-test OOP, on average. On the same post-test, those who used the VRI module teaching OOP earned an average score of 53.6%. The post-test scores were analyzed by using ANOVA (analysis of variance) and the t-test. The findings from the user studies demonstrated that the modules were notably effective at teaching the concepts and were perceived as engaging by the participants. Future work includes customizing the modules to include various tasks and lessons and enabling instructors to modify the content in the modules.

Acknowledgements: The author acknowledges the Virtual Reality Laboratory at Bowie State University for its support in this research. The author also acknowledges the students and faculty who took part in the user studies.

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BOWIE STATE UNIVERSITY
GRADUATE RESEARCH WORKSHOP 2021

Abstract 9:

Bulldog Alert: Alert and Notification Application Development
Ibeawuchi Anokam, Bowie State University

The objective of this research is to develop a prototype of a cross-platform mobile application with the core purpose of finding a better means to keep the Bowie State University community secure and connected. The mobile application consists of four core functionalities – an events system, a policing system, a directory system, and a notification system. The events system keeps the community up-to-date on current events that are happening or will be happening on campus. The policing system allows the community to stay in arms reach of campus resources that will allow them to stay secure. The directory system serves as a one-stop-shop for campus resources, ensuring that staff, faculty, and students will have a convenient and efficient means of accessing pertinent information on the campus departments. Once the Bulldog Alert application is installed and opened up, the user is first greeted by an Account Login page. After the user enters their username and password, there are two general sections in the application. The first panel holds the Events page, where local university events are posted. These events range from safety alerts to sport activities to construction news, and so on. The first page also contains a Police Button. The button is connected to the campus police phone number. Student, faculty and staff are able to push this button and alert campus police of their current location with a timestamp. This will allow campus police to respond to their emergencies in a quick and timely manner. The next panel contains the Directory Page. This is where the locations and phone numbers of key campus departments are accessed. Users are able to get notifications on their mobile device for major alerts that the university deems necessary to push out immediately.

Currently, the application actors, the user requirements, and the system requirements have been developed and tested. The prototype was developed using Unity 3D and SQL. In conclusion, the proposed cross-platform mobile application can be utilized to gain a better understanding of the campus community while also protecting them. Future work, involves performing preliminary on-campus real-world testing to gauge its usefulness while it's in its current state. Next, a qualitative assessment will be performed. Future work will also involve implementing the backend security to make the mobile application more robust and safe to use. Abstract— New members of a university must acquaint themselves with the campus layout and must know how to maneuver in and around its vicinity. This document presents a real-time feasibility study of a proprietary GPS-based mobile application system. The system will train University officials and students to quickly learn to navigate the campus and spot geographical markers and locations while also being able to search for other official's roost. The difficulty of the users to understand and easily find their target will be analyzed.

Keywords—GPS, navigation, user tracking, domain, target, SOE, DFS, BFS, digraph, directional graph, mapping, iOS, Android, training, simulation Bulldog Alert: Alert and Notification Application Development Ibeawuchi Anokam* Electrical Engineering Dept. College of Engineering and Architecture Howard University Washington D. C., USA Abstract— This document presents a cross-platform mobile application with the core purpose of Keywords— alarm system, directory system, iOS, Android, mobile application development

Funder Acknowledgement(s): The author would like to thank the Graduate School for the graduate research assistantship and Virtual Reality Laboratory to work on this project.

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Abstract 10:

Frequent Keyword Analysis for NASA's Planetary Data Systems Small Bodies Node
Syltinsy P. Jenkins, Bowie State University

This research project supports NASA's Planetary Data Systems (PDS) Small Bodies Node (SBN). The mission of the SBN is to archive, catalog, and distribute scientific data sets relevant to asteroids, comets, and interplanetary dust(1).

SBN researchers perform cross-referencing of large numbers of websites to find related information. In performing this cross-referencing task, researchers gather lists of related URLs and one-at-a-time, evaluate each webpage for the web content relevance, keywords, and updating image references. There are hundreds, to thousands of collected URLs that need to be analyzed which is a very time-intensive process.

This project aims to use data mining (DM) and machine learning (ML) techniques to assist researchers in analyzing web content for inclusion and cross-referencing with PDS data. The long-term goal is to create and implement a smart automated process, whereby an artificial intelligence (AI) model is used to perform the search, analysis, cross-referencing, and population of the PDS, while researchers perform review and validation.

In this word frequency task, the DM system analyzes hundreds of web pages on a single spreadsheet. When performing the task of analyzing a single sample webpage, it was found that human users identify between 30 to 70 words on the webpage, about 200 words are displayed to the screen, and over 5000 words are hidden. Upon initial execution, our most frequent words were not keywords. An adaptation of the Rapid Automatic Keyword Extraction (RAKE)(2) algorithm was implemented to track and remove known unnecessary words like "click here." To obtain useful results, user feedback and further refinements were required. It takes a human user about 5 minutes to review and extract keywords from a single web page, while the DM system takes about 8 minutes to extract keywords from 500 websites.

This project has entered a web platform development phase to support user interaction and data presentation. The new user interface currently takes in a single URL and returns a table of ranked keyword frequencies along with a word cloud for data visualization. The next steps involve code refactoring and adding user interaction to aid ML. This project has many areas for potential growth from advancing data mining and machine learning techniques to exploring new approaches for big data visualization, systems architecture, and advancing applications in AI.

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Acknowledgement(s): The author would like to thank NASA's PDS SBN. This work is funded by grant Z6019001

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Abstract 11:

Mobile AR COVID-19 Preparation Reminder
Syltinsy P. Jenkins, Bowie State University

Augmented reality is a growing technology for building immersive and interactive applications for anyone to use. The purpose of this project is to present and assess the usability of an augmented reality (AR) mobile application as an interactive reminder for COVID-19 basic preparation. The hypothesis is that users will find the mobile application both usable and useful as a reminder app.

The research project consisted of six stages: design, modeling, application development, deployment to the mobile platform, and pilot study.

Essentially, a mobile AR application was developed consisting of AR graphics and a dialog of three fundamental COVID-19 preparation questions rendered when a user activates an AR target marker. The interactive dialog questions come U.S. Centers for Disease Control (CDC) guidance to the public[1].

A pilot user study questionnaire was created based on the Handheld Augmented Reality Usability Scale (HARUS). The HARUS questionnaire was comprised of 16 questions focused on comprehensibility, manipulability [2], and impression of usefulness and fun. Seven participants completed the pilot study.

In conclusion, the study results show that the COVID-19 AR reminder mobile application is relatively easy to use and that the application can be considered a fun and useful application to raise awareness of COVID-19. Future plans include both basic and advanced user interface (UI) improvements and increasing the number of participants. Basic UI improvements include adding support for both landscape and portrait modes, easy access lock and unlock rotation control; adding a splash screen; and building user instructions into the application. Future advanced UI improvements include using the user's built-in cameras to perform object detection to confirm wearing a mask and gloves as well as adding mobile head-mounted display support.

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Funder Acknowledgement(s): This work is funded in part by the NSF award #1923986, NSF Award number 2032344, and NSF Award Number: 2026412.

BOWIE STATE UNIVERSITY
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Abstract 12:

Mobile Augmented Reality Application for COVID-19 Preventive Measures
Veronica Boateng, Bowie State University MD

With the outbreak of the COVID-19, the world continues to suffer from the pandemic health crisis; people avoid crowded places and are required to follow COVID-19 preventive measures to prevent the disease spread. It is essential to educate the public to follow effective preventive measures consistently. Preventive measure information should be easily accessible, and updates to such information should be readily available to the public in real-time. This work presents an Augmented Reality (AR) application for COVID-19 preventive measures using mobile technology. Our hypothesis is that this augmented reality application will be useful self-educational tool for preventing the spread of coronavirus. The methodology for the implementation of the AR application involved three-phased approach, which are modeling, unity programming, and Vuforia integration. Models used during modeling phase included COVID-19 facial mask, face shield, gloves, hand sanitizers, and thermometer exported from Google Sketch up into the Unity 3D gaming engine. Since Vuforia can be used with Android, iOS, UWP mobile systems, and digital eyewear, it was used to implement this mobile application. Vuforia asset was used to detect natural features in an image and compare it with a database of known target resources. Fivestar image target for image tracking was used during the Vuforia integration. Hence, image recognition and image tracking were both possible. The hardware used for the evaluation study consisted of Dell Laptop Intel Core i7 and Android-based smartphone Samsung Galaxy 8.

A limited user study was conducted to test the effectiveness of the proposed mobile augmented reality application. The evaluation study was based on Mobile Phone Usability Questionnaire (MPUQ) framework. The study results suggested that the application can be improved and made available for all individuals. The evaluation study was conducted with 11 users to determine user's interest in the use of the AR application as a self-educational tool for the COVID-19 preventive measures. The study results showed that 90% of participants were satisfied with the use of the AR application for preventing the spread of coronavirus. The results show that users will prefer to have handy and essential information on COVID-19 preventive measures to reduce its spread. Future work will involve linking the preventive measure information source in real-time to the mobile application to make the application available for public use.

Acknowledgements: The author acknowledges the Virtual Reality Laboratory at Bowie State University for its support during this research. The author also acknowledges the students and faculty who took part in the user studies.

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Abstract 13:

Tracking of Individualized Personal Health Record using Blockchain
Veronica Boateng, Bowie State University MD

Individualized Personal Health Record plays an essential role in more efficient access to health-related records by individuals. Health records such as recommended medications and physician advice to the patient recorded on health systems are not accessible to patients, immunization and vaccination records given as paper documents, and blood pressure monitoring data stored on blood pressure monitoring devices. Other forms of records such as lab reports, prescriptions, clinical appointments, sugar level monitoring, hospital visits, etc., which help individuals manage self-health controls, are not available in a coordinated manner on a unified view for ease of access. This work presents a Hyperledger Fabric Individualized Personal Health Record that plays an essential role in more efficient access to health-related records by individuals. Health records such as prescriptions and physician advice to the patient recorded on health systems are not accessible to patients, immunization and vaccination records given as paper documents, and blood pressure monitoring data stored on blood pressure monitoring devices. Other records, such as Lab reports, clinical appointments, sugar level monitoring, hospital visits, etc., which help individuals manage self-health care, are not available in a coordinated manner on a unified view for ease of access. This work presents a Hyperledger Fabric Blockchain-based technology for tracking individualized personal health records (IPHR) in a collaboratively unified view. We hypothesize that this blockchain-based application will help track personal health-related records for self-health care management and protect health-related record information privacy. The methodology for IPHR implementation involves a four-phased approach: reviewing the health policy framework, designing the blockchain system architecture, preparing a test dataset, and coding and configuring the prototype system. These will involve studying the generic PHR architecture, HIPAA, and AMA health data privacy framework to ensure there are no policy breaches. Will use Open-source Hyperledger Fabric permissioned private blockchain-based and Hyperledger Composer technologies with Consensus protocol PBFT to configure the app. We will build the peer-to-peer protocol component using googleRPC, the structure of the message defined by protocol buffer, and the Ledger storage saves state using RockDB. We will use the Smart Contract Chaincode, the signing key, the X509 certificate issued by Hyperledger Fabric Certificate Authority for identification, and Kubernetes and Docker containers to create and manage the Hyperledger fabric networks. The programming languages used are C++, Golang, and python programming. The system environment will include google cloud with 2 CPUs, 7.5 GB memory, and 40 GB disk space; the super-peer node will be Intel(R) Core(TM) i5, 3.30 GHz CPU, 4 cores, and 8 GB RAM. App testing will use android Samsung 8, iPhone 8, laptop, and other smart devices. For evaluation of the system, will focus on response time, CPU usage, memory occupation, disk, and network. We will use synthetic data and real data from the healthdata.gov data set with about 500 patients' anonymized databases from two health centers. We will analyze results based on average response time, determine the blockchain availability percentage, and compare performance with related research work. We will conduct a limited user study to test the effectiveness of the proposed unified view of IPHR tracked records and user access ease. The evaluation study will be based on Mobile Phone Usability Questionnaire (MPUQ) framework. Future work will be the app's scalability and piloting with health facilities and selected users as patients.

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BOWIE STATE UNIVERSITY
GRADUATE RESEARCH WORKSHOP 2021

Abstract 14:

Perceptions of African American Male and Female Freshmen on the Mathematical Achievement Gap

Deborah Remalle Higdon, Bowie State University

Multiple assessments have documented an academic achievement gap, in mathematics, between majority students and students of color, as well as between African American male and female students. Maryland Report Card, data 2015 – 2019 showed an eastern Maryland, suburban school district where grade 11 majority students achieved 86.6% proficiency, in mathematics, compared to students of color whose mathematics achievement scores were 65.7%. Further disaggregation noted that African American females' proficiency rate was 71.3% compared to 60.4% for African American males.

This is concerning. The racial gap is masking a racial and gender gap in mathematics between African American male and female high school students. This is especially important to explore because starting in middle school, a student's mathematics classes determine whether or not they will be able to pass the SAT or the ACT, which highly impacts their ability to get into college. High school math is often the ignored gatekeeper to success.

The problem explored in this qualitative research is the perceptions of African American freshmen regarding this gap. The major objectives of this study are to give voice to underrepresented African American students, in understanding there is a gap within the gap and why this gap exist thereby being intentional to eliminate it. The hypothesis is once students and educators know about this, they can be purposeful in getting rid of it. The theoretical framework is based on Critical Race Theory (CRT). Researchers connected CRT with low student achievement of African American students

This study used qualitative research based on grounded theory. Purposeful sampling selected data rich participants who completed an open-ended questionnaire via an online survey. This captured perceptions—attitudes, opinions, and beliefs about the gap within a gap. Open, axial, and selective coding was used to categorize data. It was uploaded into QDA (qualitative data analysis) Miner Lite computer software for further analysis. The data was manually coded again for accuracy.

The results showed participants cited being an African American male was a hindrance to math success. Participants' statements pointed to other influences including lack of opportunities and communications. Both genders said black males are reluctant to ask question in mathematics classes which harms their achievement. Participants connected this to a student's belief system.

A suggestion for future research is to give this survey to current high school students. Another recommendation for future studies is to conduct studies that dig deeper into students' responses by including probing questions such as Why don't African American males ask questions in mathematics class?

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Montgomery County Public Schools (MCPS). (2018). MCPS dashboard. Retrieved from <https://www.montgomeryschoolsmd.org/data/LAR-charts/Evidence-of-LearningGrade11.html>

Abstract 15:

PIANO STUDENTS' PERSPECTIVES AND EXPERIENCES WITH
REMOTE PIANO INSTRUCTION

Gwendolyn C. Jefferson, Ed.D. Bowie State University

To reveal the perspectives and lived experiences of a group of private piano students with remote piano instruction during COVID-19, a qualitative phenomenological study was conducted.

The students responded to 13 original, vetted questions via video conferencing or Google form, an online application for uploading questions and responses. The findings indicated that the students believed they were benefitting from continuing their piano instruction via remote piano instruction.

The students felt the use of their preferred virtual communication application enabled them to interact, see, hear, and maintain their established teacher/student relationship with their piano instructor.

The findings also indicated that the students had to manage and cope with the audio/visual technological interruptions and socio-emotional factors of not being able to be in the physical presence of their teacher. All of the students felt that they were continuing to make progress with their piano performance and music reading skills via remote piano instruction. The findings would benefit and should encourage piano instructors, researchers, and technology developers to conduct more research, both qualitative and quantitative, to determine the best measures for improving students' and teachers' experiences with remote piano instruction.

KEYWORDS Remote Piano Instruction, Virtual Communication, Webcam, Audio/Visual Apps, Piano Students' Perspectives

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SPECIAL THANKS

*Office of the President-BSU
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