



## UDC Research Week 2023 - Community College Day

**Theme: Serving our community through research**

**TUESDAY, April 4, 2023 10:00 am – 1:00 pm**

**Location:** Windows Lounge #207, Building 38 Van Ness campus

**Event Co-coordinators:** Dr. Naciem Yousif and Dr. Bushra Ahmad Saeed

Time	Event	Presenter(s)
10:00 am – 10:10 am	Welcome – Dr. William Hacker, Associate Dean of Academic Affairs	Dr. William Hacker
10:10 am – 10:20 am	Welcome – Dr. Victor McCrary, Vice President Research	Dr. Victor McCrary
10:20 am – 10:35 am	<b>Associates Degree Student Presentation:</b> The Importance of Hand Hygiene in Healthcare Environments	Ruby Banongwie, Fogwe Fombo Winifred, Djine Victorine, Renee Kemp
10:40 am – 10:55 am	<b>Associates Degree Student Presentation:</b> Food and Health: A systematic Review of Urban Farm practices for health enhancement	Nkechi Iweriebori and Christopher Iweriebor
11:00 am – 11:15 am	<b>Associates Degree Student Presentation:</b> Substance Abuse and mental illness	Rebecca Hyes
11:20 am – 11:35 am	<b>Associates Degree Student Presentation:</b> AgeWell Health and Wellness Program for Seniors	Natasha Brown and Kendra North
11:40 am – 11:55 am	<b>Associates Degree Student Presentation:</b> Superfund Sites in Urban Communities: Issues, Trends, and Challenges	Efua Riley Agyapoma
12:00 pm – 12:15 pm	<b>Associates Degree Student Presentation</b> Race Inequality	Juan Hernandez
12:20 pm – 12:35 pm	<b>Associates Degree Student Presentation</b> Challenges of Healthcare in underdeveloped countries	Johnette Levi
12:40 pm – 12:55 pm	<b>Associates Degree Student Presentation:</b> Behavioral Issues in Children	Gabrielle Whitaker
12:55 pm – 1:00 pm	Closing remarks UDC Research Week 2023	Dr. Bushra Ahmad Saeed

## **ABSTRACTS- oral presentations:**

### **The Importance of Hand Hygiene in Healthcare Environments**

*Ruby Banongwie, Fogwe Fombo Winifred, Djine Victorine, Renee Kemp*

Hand Hygiene is an effective way to prevent infections in a healthcare environment. Healthcare workers, like Certified Nursing Assistants and License Practical Nurses, use hand hygiene to protect the patient and themselves from spreading infections. It is important to understand the definition of hand hygiene, its history, the data that supports hand hygiene usage, and proper ways to perform hand hygiene. Research was conducted to explore the history of hand hygiene, as well as data that supports its impact in the healthcare environment. A survey questionnaire was developed and administered to healthcare workers and students, asking them to report on the use of hand hygiene in their work environment. Consistently implementing hand hygiene protocols in the health care environment is one way to decrease the spread of infections. Ongoing training and awareness of hand hygiene and its importance among healthcare workers and students in the healthcare related industries will ensure that this practice is used consistently and with fidelity.

### **Food and Health: A Systematic Review of Urban Farm Practices for Health Enhancement**

*Nkechi Iweriebori and Christopher Iweriebor*

Healthy eating enhances human health. However, access to fresh healthy food is a huge food security issue facing many urban populations in all parts of the globe. To improve the production of healthy food, there is the need for us to review current urban farm practices within the regulatory framework and how each affects the quality of food. The purpose of this research is to discover ways to improve healthy human life through urban farm practices. In this paper, we will conduct a systematic review of urban farm practices, food produce, and their health implications. Expected results include the identification of urban farm practices that produce more healthy food, challenges with implementation of these practices, and ways of mitigating these challenges for large-scale production of healthy urban food. Sustainable urban farm practices and sustainable food production will enhance the quality-of-life in cities.

### **Substance Abuse and mental illness**

*Rebecca Hayes*

Substance abuse disorder and mental illness are comorbid. You do not necessarily need one to have the other, but more likely than not, if you have one, you will have the other. My research project shows the connection between substance abuse and mental illness and shed the light on diagnosis and treatment of this group of patients.

## **AgeWell Health and Wellness Program for Seniors**

*Natasha Brown, AAS Nursing student & Kendra North, AAS Nursing student*

The Associate of Applied Sciences nursing students collaborated with the Primary Investigator from the AgeWell grant to offer health and wellness education and selected patient care to seniors in Ward 8 of the District of Columbia. The nursing students conducted weekly rotations. The purpose was to provide health education, patient screenings, health promotion, health prevention, diet management, activity, and community navigation. This program engaged the senior community and educated them on selected health and community topics to assist in maintaining and improving health outcomes.

## **Superfund Sites in Urban Communities: Issues, Trends, and Challenges**

*Efua Riley Agyapoma*

Superfund sites are found in specific areas in a county or city. Toxic and non-toxic waste is dumped in these sites and treated using strict measures and procedures to prevent any leakage that could harm the environment. Residents need to make sure that these sites are kept under control and do not pose any danger to their communities. This case study investigates the status of and reports on a sample of these superfund sites in different quadrants in the District of Columbia. Results of this investigation and recommendations will be shared with the UDC community

## **Race Inequality**

*Juan Hernandez*

This presentation aims to highlight the many disparities of inequality and how it affects society today. Individuals' social and economic status is measured based on wealth, income, occupation, and education. The combination of social and economic situations has shown that certain groups of individuals cannot access some of these resources, privileges, and power. These inequalities have affected how it affects the social network and economy. Researchers at UNICEF shared that they believe that most individuals who suffer from multiple rights deprivation often encounter inequalities compared to other societal groups. According to New York Times, author Courtney E. Martin stated in his article that the United States had created some tolerance towards the widening chasm between the wealthy and those with a low income. According to the Pew Research Center, in contrast to European and Asian nations that fund schools centrally and equally, the wealthiest 10 percent of U.S. school districts spend nearly ten times more than the poorest 10 percent, and spending ratios of 3 to 1 are common within states. Furthermore, cultural confinements have a life-long impact and stigma of an almost everlasting decline concerning the social class of minorities.

## **Challenges of Healthcare in underdeveloped countries**

*Johnette Levi*

Healthcare is one of the most basic human needs, and it is critical to the social and economic developments of any country. However, healthcare in underdeveloped countries faces numerous challenges that make it difficult for these countries to provide adequate healthcare services to their populations. In this presentation, we will explore some of the challenges facing healthcare in underdeveloped countries and the potential solutions to these challenges.

## **Behavioral Issues in Children- art therapy vs. traditional therapy**

*Gabrielle Whitaker*

Often children with behavioral issues are referred to a therapist. Traditional therapy may not be successful for children especially if they are having difficulties with communicating their emotions already. Art therapy is a type of therapy that involves using different materials to express your emotions. I believe that art therapy is more effective for children with behavioral issues than traditional therapy.

## **ABSTRACTS- poster presentations:**

### **Is Virtual Reality based technology an effective teaching tool for Anatomy instruction?**

*William Trotman, Mortuary Science Student, Damon Downs, MD, Assistant Professor*

Virtual reality (VR) is an innovative tool currently used to teach anatomy. Three-dimensional (3D) anatomy cloud platforms are operated by students, educators, medical professionals, and institutions, offering interactive anatomy courses and allowing for independent curriculum design. Virtual reality, three-dimensional, provides viewing of all of the structures and parts of the Human Body. There are gross anatomy models, microscopic models of tissues and cells, a beating heart, realistic muscle motion, and bone mapping. Many virtual reality platforms, like 3D4 medical manufactured by Complete Anatomy, give students access to over 1,500 videos and audio recordings, including videos grouped for cardiology, orthopedics, ophthalmology, dentistry, and fitness. This presentation aims to review current research on the topic and inform its appropriateness for educating anatomy students. A review of the literature that reflected recent studies from the years 2020-2021 was conducted. The sources provided data on randomized controlled trials, its participants were anatomy students. Studies reviewed included teaching outcome measure analysis and examined risk bias. The primary outcomes were students' examination scores, and the secondary outcomes were the degree of satisfaction of the students.

## **Application of Fuses and Breakers in Electrical Circuits, and Troubleshooting Techniques**

*AAS Aviation students: Fabrice Wansi, Younes El-Hakoor, Amy Soto and Anil Pyakuryal*

Electrical circuits are used in various applications, ranging from household appliances to industrial machineries. Most common hazards of working with electricity include electric shock and burns from contact with live parts, injury from exposure to arcing, fire from faulty electrical equipment or installations etc. Malfunctioning equipment in the circuit can cause various types of electrical hazards. Fuses and breakers are important devices that are commonly used in electrical circuits to protect them from the overloads, short circuits, and other faults thus avoiding casualties and electrical hazards in our household. Such devices must be installed properly in the circuits for our safety as well as for our economic advantage in technology. In this project, we studied the application of fuses and breakers in different types of electrical circuits, and its efficacy using a PHET Simulator. Applicable troubleshooting techniques to maintain such types of circuits were also explored.

## **Mortuary Science and service to the community**

*AAS Mortuary Science student, Chan-Terrassa Douglass*

This presentation will focus on the historical aspects of Mortuary Science and how the field has evolved to serve the community. The presentation will be focused on funerals in different religions, cultures and the diverse population.

## **An introduction to 3 D-4 Medical Complete Anatomy, an advanced technology used to educate nursing students, and the professional implications for its clinical use in the nursing field**

*Students of Anatomy course and Damon Downs, MD, Assistant Professor*

Complete Anatomy, made by 3D4Medical, is an educational three-dimensional (3D) anatomy cloud platform used by students, educators, medical professionals, and institutions. Its platform offers interactive anatomy courses and allows for independent curriculum design; however, it is often provided to students as stand-alone courses to review material. Unique to this tool is the three-dimensional viewing of all of the structures and parts of the Human Body. There are gross anatomy models, microscopic models of tissues and cells, a beating heart, realistic muscle motion, and bone mapping. Students have access to over 1,500 videos and audio recordings, including videos grouped for cardiology, orthopedics, ophthalmology, dentistry, and fitness. This presentation aims to demonstrate how the new technology software is being used to educate pre-nursing professionals in pre-requisite courses such as Anatomy and Physiology. 3D technology simulations have become essential in lecture and lab instruction. With this tool, instructors demonstrate the full viewing of anatomical structures and physiological processes with highly accurate results. Complete Anatomy

enables students to dissect structures as if they're experiencing the actual hands-on procedure, but without the time-consuming necessary preparation and clean-up required before and after.

**Anticipated program: AS Degree in Quantum Literacy**

*Students of AS Natural Science and Dr. Abed Sami Almala, Visiting Professor, Natural Sciences*

Quantum industry is a rapidly growing field in both the public and private sectors. Citizens, particularly students and working professionals, need to be aware of the emerging and rapidly growing “quantum movement” that is expected to see a surge in productivity due to cross-disciplinary applications of quantum science and technology in critical areas such as finance, medicine, biotechnology, nuclear power, climate change, transportation, and information technology. This presentation sheds some light on the current trending and changing needs of the quantum industry and how these needs could affect the UDC urban community, businesses, and day-to-day life activities.