



BREAKAWAY (PARALLEL) TECHNICAL SESSION

Day 1 (21 March 2018)

Venue 1: Digital Revolution, Disaster Management, Education and Outreach.



Name: S. Khuluse

Affiliation: CSIR (Council of Science and Industrial Research)

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Bio: Sibusisiwe Makhanya (maiden Khuluse) is a Senior Researcher in Statistics at the CSIR. She has been with the CSIR for 11 years, devoting a substantial portion of that time pursuing graduate studies. This includes being Harvard University Graduate School of Arts and Sciences student fellow in the 2010/11 academic year. She holds a doctoral degree in Spatial Statistics from the University of Twente. She is a registered Chartered Statistician with the Institute of Certified and Chartered Statisticians of South Africa; Graduate Statistician with the Royal Statistics Society (United Kingdom) and an ordinary member of the South African Statistical Association.

She currently has ten peer-reviewed scientific papers published in journals and conference proceedings and over thirty technical reports and non-peer reviewed talks. Her core research interests are in statistical risk analysis including extreme events as well as general statistical applications involving the analysis spatiotemporal data. She has experience in consulting on projects that utilize statistical methods for decision support in industry and in scientific research where statistical evidence is required to further scientific enquiry. Applications at the interface of the environment and society are of interest to her.

Talk Title: Air Quality Exposure Analysis - Data Challenges, Findings And Recommendations From A Case Study In South Africa.



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Name: Sthembile Mthethwa (570-DR)

Affiliation: Women in science without borders

Contact: smthethwa@csir.co.za

Bio: My name is Sthembile Mthethwa, with a Masters degree in Computer Science. I am a researcher at CSIR (Modelling and Digital Science).

Talk Title: Verifying the Integrity of Hardcopy Document Using OCR

Abstract: Hardcopy document forgery is still a challenge and occurs frequently nowadays. Many countries have reported a lot of cases, including South Africa where government issues documents are forged. Protecting these documents from being tampered with is necessary at all times. Various methods have been presented to deal with the challenge of document forgery such as, e.g. Optical Character Recognition (OCR). In this paper, we improve OCR with the aim to achieve a high accuracy to eliminate the misrepresentation of characters read from an image file. To implement the solution we use an OCR tool, Tesseract. The experimental setup is explained and the results which yielded an accuracy of 100% are discussed in detail. While this is on-going work, the experimental results demonstrate the feasibility of using OCR as part of the solution.



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Name: Beatrice van Eden (654-DM)

Affiliation: Council for Scientific and Industrial Research (CSIR)

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Bio: Research and Development Engineer at the CSIR.

Talk Title: Robots for Disaster Management

Abstract: The past years have seen many deadly natural disasters including hurricanes, earthquakes, flooding and landslides. Search and rescue efforts have saved numerous lives but numerous others were lost. At the same time, robotic technology is becoming more widespread, and brings with it the potential to assist in these search and rescue scenarios. Despite many impressive advances, robots still

lack the ability to function as humans do in complex environments. Importantly, this includes being able to interpret and understand complexities of the world as humans do. This short paper explains our first steps towards better robot cognition, for use in search and rescue scenarios. To this end, we focus particularly on the ability to understand the current surroundings of the robot. Our setup involves collecting data from a mobile robot moving between three different settings, and using this to train a neural network to identify the current setting. The robot will then be able to roam around in an environment and identify the three settings, marking them on the map it creates of the environment.



Name: Millicent Agangiba (549-DR)

Affiliation: University of Cape Town

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Bio: I am a PhD researcher at The University of Cape Town and a lecturer at The University of Mines and Technology, Tarkwa-Ghana. My research is centred on interaction and accessibility, particularly in the areas of E-government, E-learning, and Information and Communication Technologies for persons with disabilities in developing countries

Talk Title: Web developers' perspective on the accessibility of E-government Services for Persons with Disabilities in Ghana

Abstract: Accessibility of E-government services is a major concern today as governments globally are advancing in the provision of online

services. Yet, most developing countries are seen to have made little progress in the provision of inclusive E-government services particularly towards person with disabilities (PWDs) despite the fact that 80% of the world's population with disabilities reside here. Given that web developer's perceptions can influence the design and development of E-government services, it is of outmost importance that we seek to understand their attitudes on the provision of accessible E-government services. This study therefore, examines the perceptions of developers on accessibility of E-government services for PWDs in Ghana, one of the developing countries on the African continent. Developer's experiences in a developing country context, can then be used for directing design and implementation decisions towards the delivery of accessible services to PWDs in these contexts.

Inductive thematic analysis of transcripts from in-depth interviews with ten developers revealed six themes: (i) factors that influence development process; (ii) developers lack of knowledge in accessibility needs of PWDs; (iii) government not serious with PWDs; (iv) accessibility hindrances for PWDs; (v) accessibility requirements, benefits and awareness; (vi) and developers' opinions on accessibility. Our findings show that the lack of accessibility awareness is a key impediment to the development of accessible applications. The study provides recommendations to address these contextual concerns.



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Name: Nova Ahmed (83-EO)

Affiliation: North South University, Bangladesh

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Bio: Dr. Nova Ahmed is an Associate Professor at North South University, Bangladesh. Her research interest varies from unpredictable sensors to mischievous human behavior - working on detailed distributed systems to novel ways to work with people. She has finished her PhD at Georgia Institute of Technology and has returned to her home country Bangladesh to be part of changes. She is actively involved in promoting STEM related fields among children and women. She is a happy and disorganized mom on all the other times spending time with her two daughters!

Talk Title: Technology Divide among Urban Female Youth.

Abstract: Laboratory studies are crucial for subjects such as Electrical and Computer Engineering (ECE) which is considered to be one of the emerging subjects of choice among students of Bangladesh. However, a technology divide is observed in the laboratory-based classes where female students are not very vocal or participative as they are in their corresponding theory classes. We have conducted a two year long study on students to find out reasons behind such division and possible ways to improve the laboratory education in a way it is inclusive regardless of gender where we share some findings here.



Venue 2: Food Security, Climate Change, Water.



Name: Adejoke Obajuluwa (119-FS)

Affiliation: Department of Forest Production & Products, University of Ibadan, Nigeria

Contact: ibitayoao@abuad.edu.ng

Bio: Adejoke Olukayode Obajuluwa (nee Ibitayo) is a researcher and lecturer at the Department of Biological Sciences (Biotechnology Unit), Afe Babalola University which she joined in 2013. She has since worked in diverse areas of research such as molecular toxicology, gene expression studies etc. She is an alumnus of University of Lagos, Nigeria where she had a Masters Degree in Genetics and currently a PhD scholar at Zoology Department, University of Ilorin, Kwara State Nigeria. She is passionate about teaching with a vision of National transformation through education. She has published over 11 research articles and is actively undertaking her PhD molecular research on therapeutic interventions for Fetal Alcohol Spectrum Disorders.

Talk Title: Improving mass propagation of *Annona muricata* L. from stem cuttings: requirement for growth promotants and potting media

Abstract: *Annona muricata* (Soursop) is a tropical fruit tree that occupies a promising position in today's fruit market. However, its propagation by seed produces highly heterogeneous orchards which affects the quality and quantity of the fruit. Urgent efforts are therefore required to facilitate its large-scale propagation towards sustainable production in home-gardens, plantation establishment, and/ or re-introduction into the natural forests for improved food security. We investigated the effects of nodal position, rooting hormone and potting media on the mass propagation of *A. muricata*. Percentage sprouting, rooting and survival of cuttings were monitored weekly for 60 days. Data were analysed using Descriptive statistics and ANOVA with DMRT for separation of significant means. Hormone concentration significantly affected number of leaves, number of roots and root length of *A. muricata* cuttings at $\alpha 0.05$. Double node cuttings had higher number of leaves, number of roots and root length when compared with single node cuttings. Highest number of leaves (2.2 ± 0.01), roots (3.7 ± 0.02) and root length (6.4 ± 0.05 cm) were recorded in IBA 0.2 mg L⁻¹. The results reported may be complemented by further investigation, especially the survival and vigour analyses of the seedlings.



Name: Mercy Sosanya (406-FS)

Affiliation: The Federal Polytechnic, Bauchi

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Bio: Sosanya, Mercy Eloho is the Head of the Nutrition and Dietetics Department, Federal Polytechnic, Bauchi, Nigeria. She is documenting the nutritional status of vulnerable populations in Northeastern Nigeria, and designing low-cost, high-impact interventions to reduce malnutrition, using indigenous resources. Mercy is a 2015 TechWomen Fellow and a mentor for the Global Technovation Challenge. Through Mercy's initiative "Girls Discover STEM", she is helping girls learn about and acquire basic STEM skills through fun

activities. She organizes science teachers workshops to improve STEM lesson delivery. She collaborates with other organizations to deliver a program called "YouthCanTech" a digital literacy training for children.

Talk Title: A Comparison of the Food Security Status and Macronutrient Intakes of Female-headed and Male-headed Households in Bauchi Local Government Area in Nigeria

Abstract: This study compared the food security status and nutrient intakes of female-headed and male-headed households in Bauchi Local Government Area in Bauchi State, Nigeria. A semi-structured questionnaire was used to collect food security and nutrient intake data from 49 female and 75 male household heads. The energy and protein intakes (1556.0 ± 687.3 Kcal and 56.0 ± 38.0 g respectively) of the female household heads were significantly lower than the intakes (1782.4 ± 709.6 Kcal and 96 ± 56.6 g respectively) of the male household heads ($p < 0.05$), while there were no significant differences in the carbohydrate, fibre and fat intakes of the respondents. Majority of the female-headed households (37 (75.5%)) were food insecure with severe hunger, whereas only 13 (17.4%) of male-headed households were food insecure with severe hunger. Concerted efforts are needed to improve the nutritional well-being of female-headed households.



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Name: Tafadzwa Maramura (379-W)

Affiliation: North-West University

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Bio: Tafadzwa Clementine Maramura, holds a Bachelor of Social Science (Cum Laude), Honours Public Policy (Cum Laude) and a Master of Public Policy (Governance) from the University of Fort Hare, South Africa. She is currently completing a PhD in Public Management and Governance (Water Governance) at the North-West University, South Africa. Her research interests are in Water Governance, Urban Water Management, Water and Sanitation, Prepaid Water Meters and Public Policies. Her special areas of interest include research into the efficacy of prepaid water meters as innovative and sustainable potable water provision tools in developing nations.

Talk Title: Citizen Perceptions: A trajectory on the effectiveness of prepaid water meters in Harare

Abstract: Even prior to their implementation prepaid water meters have been contentious in Harare with residents citing that the new tools are an impartial technology which is simply meant to benefit the service provider, whilst restricting potable water consumption. This study enunciates that despite the resident's views on prepaid water meters, potable water should not be distributed free of charge, but yet it should be available as a fundamental need. Through a mixed method research design, 271 structured questionnaires were administered to Harare residents in enabling the provision of a measurement of the resident's views regarding the metering system and the descriptive statistical analysis was used to determine the results. Ten interviews were also conducted with key informants based on their proficiency as the service providers instigating the prepaid water meters. Two focus group discussions with two of the civil water organizations that are crucial catalysts between the Harare City Council and Harare residents were also conducted. In the summative, the aim of this study was not to disregard prepaid water meters but to understand their efficacy through the lenses of the citizens as the service users who play a vital role in enabling the effectiveness or ineffectiveness of the meters. Furthermore, this study ultimately recommends that the effectiveness of prepaid water meters will only be efficacious with due reflection on all-encompassing stakeholder engagement and pro-poor approaches. population.



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Name: Michelle Pretorius (413-CC)

Affiliation: Fisheries Climate Change Task Team, Department of Agriculture Forestry and Fisheries.

Contact: MichellePR@daff.gov.za

Bio: Michelle Pretorius has completed her MSc at the age of 23 years from the University of Cape Town and is currently pursuing her PhD at the University of the Western Cape. She holds a position as an Environmental Officer in Sustainable Aquaculture Management within the Department of Agriculture Forestry and Fisheries.

Talk Title: Fisheries and Aquaculture Vulnerability to Climate Change.

Abstract: Department of Agriculture, Forestry and Fisheries (DAFF) assessed the vulnerability to Climate Change (CC) of all South African (SA) marine fisheries, including the marine aquaculture sector. Vulnerability indices were assigned to 16 different fisheries/fisheries groups and the marine aquaculture sector. These took into account a) the sensitivity to CC of each resource and the fishery dependent on it, b) the potential impacts on human livelihoods of environmentally-induced changes in the resource, and c) the ability of the fishery to adapt to such impacts.



Venue 3: Education and Outreach.



Name: Kshanika Hirimburegama (293-EO)

Affiliation: University of Colombo, Sri Lanka; British College of Applied Studies

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Bio: Prof Kshanika is the former Chairperson of University Grant Commission and she is the fourth lady Vice Chancellor in Sri Lanka. Now she is working at British College of Applied Sciences as the Dean of Academic Affairs. Prof Ksanikas' research interests are for plant biotechnology, improvement of banana, research & development of plant biotechnology to the rural sector in Sri Lanka and research in women empowerment. Past few years she was awarded for Zonta Award for Most Outstanding Achievement given for Women-2006, National Award

Winner – Ministry of Science & Technology and Best Agricultural Research Award.

Talk Title: Women participation in higher education especially in sciences- Case study in Sri Lanka



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Name: Ilaboya. I. I (227-EO)

Affiliation: Department of Animal Science, University of Ibadan, Nigeria

Contact: bina.ilaboya@gmail.com

Bio: My name is Ibinabo Imuetinyan Ilaboya .I was born in Edo State Nigeria, 1975 April 20th. I attended Egba grammar school for my secondary education in 1991. I went to Ambrose Alli University where i obtained Bachelors degree in Animal Science 1999. Further proceeded to University of Ibadan, where i got my Masters degree in 2003. Presently i am running a PhD programme in Agricultural Biochemistry and Nutrition in the University of Ibadan. I lecture Animal science related courses at the Edo State College of Agriculture, Iguoriakhi. I am married to Engineer

Adebayo Ilaboya.Iriafen and we have four children.

Talk Title: Effect of supplemental phytase on true phosphorus digestibility in cottonseed meal and rice husk-based diets in broiler chickens.

Abstract: Available phosphorus is limited in Plant-Derived Feed Ingredients (PDFIs) used in formulating diets for poultry. The PDFIs are characterised by low True Phosphorus Digestibility (TPD) and high Endogenous Phosphorus Loss (EPL) with negative environmental consequences. The potential of exogenous phytase in breaking Phytate-Phosphorus Complex has been documented. However, information on TPD and EPL in Broiler Chickens (BC) fed diets supplemented with phytase is scanty. Therefore, effect of phytase in Cottonseed Meal (CSM) and Rice Husk (RH)-based diets on TPD and EPL in BC were investigated. EPL was reduced at both sites of sampling (ileal and total tract sections). Addition of phytase clearly resulted in 13.27 and 17.94 percentage points increase in TPD; 12.29 and 13.61 percentage points increase in true retention of P (TRP) in birds fed CSM and RH diets respectively. Phytase supplementation reduced EPL and increased TPD in BC.



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Name: Elize Smit (554-EO)

Affiliation: Department of Chemistry, Faculty of Science, University of Johannesburg

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Bio: Dr Elize Smit is a lecturer of Chemistry at the University of Johannesburg. She obtained her PhD in 2016 (University of Pretoria). As a prize winning student at school and university, she has a lifelong passion for education and learning. As a young academic she is interested in the use of technology in teaching. Her research interests also include analytical techniques and how they can be used to further the understanding of fundamental processes, especially with the use of chemometrics. She has presented her

research at national and international conferences. She also enjoys baking and spending time with her family.

Talk Title: Custom-made model building kits for use in undergraduate Chemistry modules.

Abstract: Molecular model building kits were custom-made for first year students using 3-D printing technology. This provided a cost-effective means to supply students with educational tools to enhance their experience and understanding of chemistry. Students were introduced to these model building kits during hands-on tutorial sessions. Students were also tasked to design a digital or physical 3-D model of specific organic compounds as a group, which allowed them to engage with technology through inquiry based learning. Student experience was evaluated by means of a survey.



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Name: Kemi Omotesho (586-EO)

Affiliation: University of Ilorin, Ilorin, Nigeria

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Bio: Dr. Kemi F. Omotesho is a Research Fellow in the Department of Agricultural Extension and Rural Development, University of Ilorin, Ilorin, Nigeria. A background in Agriculture and twelve years' experience in agricultural risk management in the rural banking sub-sector assisted greatly in shaping Dr. Omotesho's research interest in rural Development. The desire impact rural livelihood drove her to pursue a Doctorate programme in Agricultural Extension and this, she obtained in 2015. Since then, she has been involved in teaching and research as a Faculty staff. Her research interests include climate change, rural finance and food security.

Talk Title: Disseminating Innovation on Dry Season Rice Farming in Remote Communities in Kwara State, Nigeria: Extension Volunteers to the Rescue.

Abstract: The abysmally low extension agent to farmer ratio is a significant challenge to the dissemination of information on dry season rice production in Nigeria. This case study explores the use of agricultural science teachers of secondary schools in remote, rice-growing communities of Kwara State as volunteer extension service providers, particularly to ameliorate rice farmers' annual loss to flooding through the introduction of dry season rice farming. Fifty-two agricultural science teachers were trained, and each was deployed to one of the fifty-two farmer –groups into which the rice farmers in the study area had been divided. A field survey was carried out with the use of an interview schedule to assess the effectiveness of the teachers in extension service delivery. Descriptive statistical tools, the Probit and Multiple Regression models were used to analyse data collected. Results reveal a high level of effectiveness, influenced by the age of the teachers, their level of education and distance to clientele.



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Name: Antoinique Van Staden (622-EO)

Affiliation: University of Pretoria

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Bio: I have been called an engineer whisperer and I intend to use my skills as a language practitioner to help engineers better communicate with the outside world.

Talk Title: Plain Language funding proposals for clearer communication between scientists.

Abstract: Communication is the cornerstone of our global society. English is widely accepted as the lingua franca in most scientific fields, although many scientists are not mother tongue speakers of English. Communication can therefore be hampered by a lack of vocabulary or even different "Englishes" from around the world. Because of rapid technological advancements and complex problems, scientists are often required to collaborate on projects [1]. In this context, the term scientist is a very broad one that includes different fields and specializations, each using fieldspecific terminology and concepts. For this reason, when crosscollaboration is necessary, it can be difficult for scientists to communicate with one another. One example of where inter-disciplinary communication is necessary is funding proposals. Proposals are rarely reviewed only by scientists in the same field - usually a reviewing committee is comprised of several scientists from different specializations. Proposals risk being rejected because the message of a proposal is lost in this interdisciplinary setting. One way to better facilitate this communication process is through the use of Plain Language. This paper, will look at sections of a rejected funding proposal and use the principles of Plain Language to illustrate how the message could have been improved through changes in the language use, structure and layout of the funding proposal.



Venue 4: Health.



Name: Smita Pawar (480-H)

Affiliation: Head & Associate professor Department of Genetics, Osmania University

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Bio: I Dr. Smita c. Pawar, Head and Associate Professor, Department of Genetics & Biotechnology at Osmania University, Hyderabad, India. Presently guiding 4 research scholars for their PhDs and also I mentor one women scientist. I am PI for five ongoing Major Research Project and have authored 16 international publications in journals of repute. I am a recipient of the prestigious “DST-BOYSCAST AWARD” given to pursue Post-doctoral research at University of John Hopkins

University, USA. In 2016b I received -State Best Young Teacher Award (youngest in country till date to receive this award), Young Scientist Award by BMMRC etc

Talk Title: Targeting tumor angiogenesis via endogenous collage derived metabolite



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Name: Adejoke Obajuluwa(nee Ibitayo) (623-H)

Affiliation: Department of Forest Production & Products, University of Ibadan, Nigeria

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Bio: Adejoke Olukayode Obajuluwa(nee Ibitayo) is a researcher and lecturer at the Department of Biological Sciences(Biotechnology Unit),Afe Babalola University which she joined in 2013.She has since worked in diverse areas of research such as molecular toxicology, gene expression studies etc.She is an alumnus of University of Lagos,Nigeria where she had a Masters Degree in Genetics and currently a PhD scholar at Zoology Department ,University of Ilorin, Kwara State Nigeria.She is passionate about teaching with a vision of National transformation through education.She has published over 11 research

articles and actively undertaking her PhD molecular research on therapeutic interventions for Fetal Alcohol Spectrum Disorders.

Talk Title: Exposure to radio-frequency electromagnetic waves alters acetylcholinesterase activity and induces DNA damage in brains and exploratory and motor coordination linked behaviour of young male rats.

Abstract: Humans in modern society are exposed to an ever-increasing number of electromagnetic fields (EMFs) and some studies have demonstrated that these waves can alter brain function but the mechanism still remains unclear. Hence, this study sought to investigate electromagnetic waves (RF-EMF) exposure effects on cerebral cortex acetylcholinesterase (AChE) activity, DNA fragmentation and alteration in exploratory and motor coordination linked behaviour using an animal model(young male wistar rats).



Name: Kamunhwala Gausi (440 - H)

Affiliation: University of Malawi, Chancellor College, Malawi Liverpool Wellcome Trust

Contact: kgausi@mlw.mw

Bio: I am a young, enthusiastic and hardworking statistician, who is about to complete her Masters in Bio-Statistics studies at Chancellor College. A holder of a Bachelor of Sciences degree in Mathematics and Statistics obtained at the University Of Malawi, Chancellor College in 2013. Currently working for Malawi Liverpool Wellcome Trust as an intern, to develop my statistical skills and medical knowledge and provide statistical support. I aspire to pursue studies towards a doctorate degree and become an independent researcher in the area of

my expertise and mentor the next generation of researchers.

Talk Title: Cardiac Safety Of The Administration Of Artemether-lumefantrine Following Parenteral Quinine In Children With Severe Malaria Anaemia

Abstract: A combination of quinine and artemether-lumefantrine (AL)

are medications used to treat severe malaria in some parts of sub-Saharan Africa. However, both drugs are known to cause toxicity of the heart (QT-prolongation). Little is known whether this effect is increased by sequential administration of the two drugs. Secondary data from a clinical trial on intermittent preventive therapy post-discharge (IPTpd) was analysed. Electrocardiograph assessments were conducted 12 hours after the last quinine dose which was immediately prior to the first AL dose (0 hour), and again 6 hours and 62 hours later. A linear mixed-effects model (LMEM) was derived to analyse the effect on the QT-interval of AL. The QTc trend across the three time points was, an elevated QTc (mean of 465 ms) at 0 hour, presumably due to the effect of quinine, followed by mean QTc decreased at 6 hours to 461 ms then a rise at 62 hours to 463 ms. The parameter estimates from LMEM were 465 ms for the intercept and -0.338 ms/ng/mL for slope indicating that even with an increase in concentration of AL, QTc decreases with time. Sequential administration of LA did not maintain the high QTc values caused by quinine, but patients receiving more quinine dose were at high risk of QT-prolongation.



Name: Tinuola Adebolu (645 - H)

Affiliation: Department of Microbiology, Federal University of Technology, Akure, Ondo State, Nigeria.

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Bio: My area of research is Medical Microbiology with specialty in Bacterial Infections/Immunity/Non-Conventional Therapy. I got my PhD in Microbiology from Obafemi Awolowo University, Ile-Ife, Nigeria in 1993. Presently, I am the Director, Centre for Gender Issues in Science and Technology at the Federal University of Technology, Akure, Nigeria.

Talk Title: Composite “Ogi” Liquor: An effective alternative to ORS in the Management of Diarrhoea caused by Escherichia coli O157: H7.

Abstract: Administration of Oral Rehydration Solution (ORS) is a simple way of treating diarrhoeal patients. This is primarily to prevent complications such as dehydration and loss of electrolytes. However, since it is possible that the sachet of the special salts for preparing the solution may not be available in cases of emergency especially in rural areas; there is the need to search for an alternative in treating diarrhoeal patients. In this study therefore, the liquor of 48h fermented composite “ogi” (LOFCO) was investigated as an alternative to ORS by comparing their chemical compositions using standard assays and also their effect when administered to albino rats infected with E. coli O157:H7, the aetiologic cause of hemorrhagic diarrhoea. Although both were observed to have similar chemical compositions, only LOFCO caused the recovery of the infected rats but the ones that were treated with ORS did not recover throughout the duration of the investigation. From this study therefore LOFCO is being recommended as a better alternative to ORS since in addition to having similar chemical composition which can be exploited in replenishing lost electrolytes and minerals during episodes of diarrhoea, it also has therapeutic effect on rats infected with the organism.



Name: Temitope Agboola (411 - H)

Affiliation: Department of Microbiology, Obafemi Awolowo University

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Bio: I am Agboola Temitope, a Master degree graduate in Microbiology O. A. U. Ife, Nigeria. I am the first of three children born by Mr & Mrs A. O. Akinya. I was privileged to serve as Senior prefect girl, deputy coordinator of Unification of all Secondary School Christian fellowship and Sisters coordinator in Bible believers Club Ife. I am the founder of Crisp Edge Enterprise. My pursuit is to become a great Environmental Microbiologist and an entrepreneur which is due to my experience as a leader in youth gatherings and growing up as a child of a pastor and trader.

Talk Title: Studies On Individual And Combined Antimicrobial Activities Of Methanolic Extracts Of *Allium sativum* bulbs and *Garcinia kola* seeds on some selected Bacterial Isolates.

Abstract: This study investigated the individual and combined antimicrobial activities of the methanolic extracts of *Allium sativum* bulbs and *Garcinia kola* seeds on some selected bacterial isolates, assessed the minimum inhibitory concentration of the crude extracts. This was with a view to determining if the crude extracts have synergistic effect.

The seeds of *Garcinia kola* and bulbs of *Allium sativum* were purchased from Central Market, Ile – Ife Southwest Nigeria, dried, and then ground into a fine powder. The powdered plant materials were extracted using 60% methanol separately, filtered, concentrated in vacuo, lyophilized and screened for phytochemicals and antibacterial activities individually and in combined form against some selected bacterial isolates. Minimum inhibitory concentrations (MIC) of the extracts were determined.

The extracts of the plant materials individually and in combined form exhibited different degrees of antimicrobial activities. Phytochemical screening revealed the presence of saponins, tannins, flavonoids, reducing sugar, alkaloids and steroids in *G. kola* while saponins, triterpenes and steroids were present in *A. sativum*.

The MIC of the methanolic extract of *G. kola* ranges between 0.313 mg/ml and 2.5 mg/ml, MIC exhibited by *A. sativum* was 2.5 mg/ml while MIC that ranged between 0.313 mg/ml and 1.25 mg/ml was observed when the extracts were combined at equal proportion.

The study concluded that the crude extracts of *G. kola* and *A. sativum* exhibited potentials of synergy against pathogenic bacteria.