

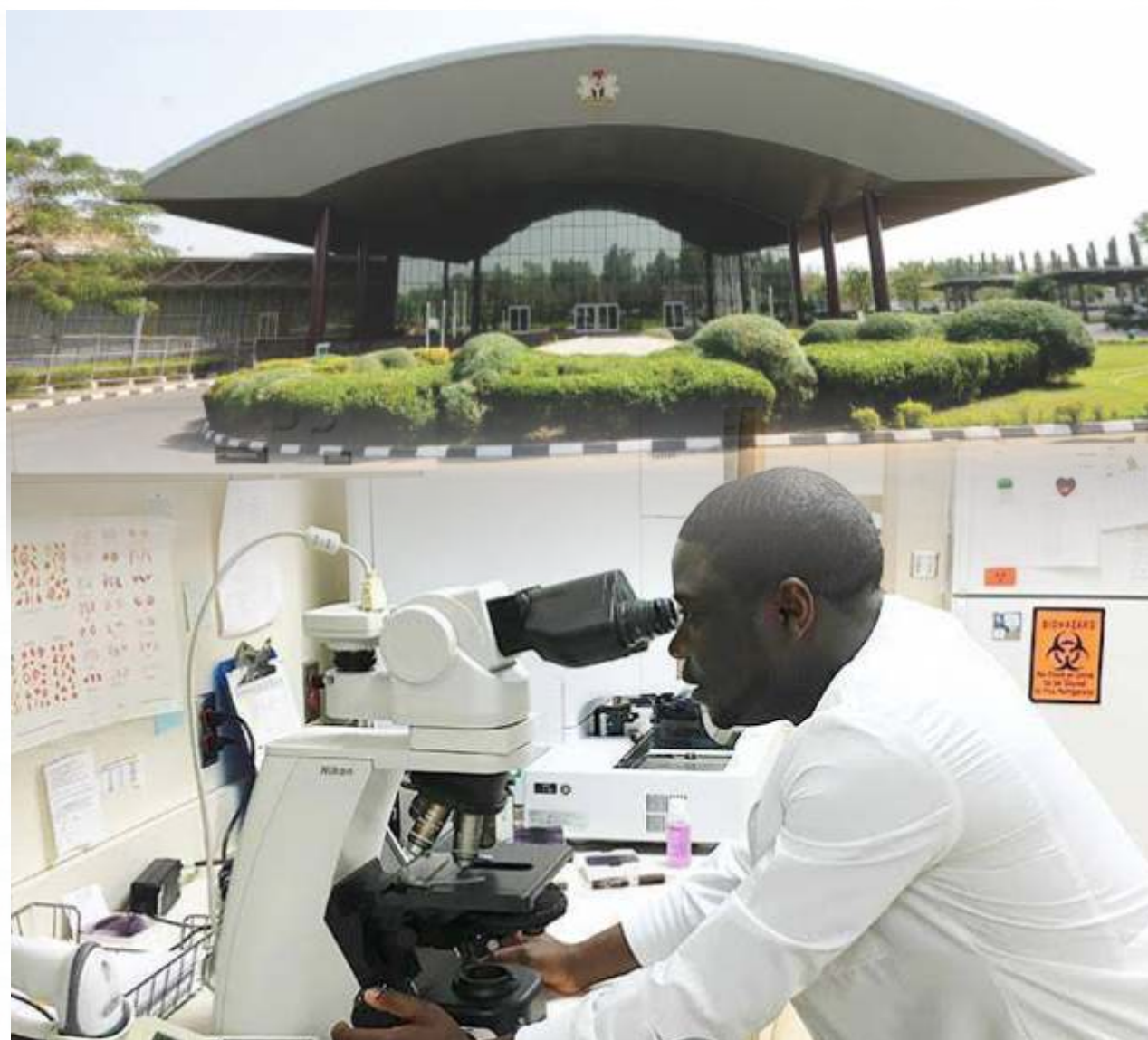


NiBSA

Nigerian Biological Safety Association



ANNUAL BIOLOGICAL SAFETY CONFERENCE 2019



“The Role Of Biosafety And Biosecurity In National And Regional Development”

Venue: International Conference Center, Garki Abuja.

Date: November 18- 23, 2019 **Time:** 10:00 am Daily



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NATIONAL ANTHEM

Arise, O compatriots
Nigeria's call obey
to serve our fatherland
with love and strength and faith.
The labour of our heroes past
shall never be in vain,
to serve with heart and might
one nation bound in freedom
Peace and unity.

Oh God of creation,
direct our noble cause
Guide thou our leaders right
Help our youth the truth to know
In love and honesty to grow
And live in just and truth
Great lofty heights attain
To build a nation where peace
And justice shall reign

THE PLEDGE

I pledge to Nigeria my country, to be faithful,
loyal and honest. To serve Nigeria will all my
strength, to defend her unity, uphold her
honour and glory, so help me God.”





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HIS EXCELLENCY

Muhammadu Buhari, GCFR

**President, Commander-in-Chief of the Armed Forces
Federal Republic of Nigeria**



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HIS EXCELLENCY

Prof. Yemi Osinbajo, SAN, GCON

**Vice President
Federal Republic of Nigeria**



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Dr. Osagie-Ehanire

**Hon. Minister of Health
Federal Ministry of Health**

Special Guest of Honour



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Alhaji Muhammed Bello

Hon. Minister
Federal Capital Territory

Chief Host



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Dr. Muhammad-Mahmood

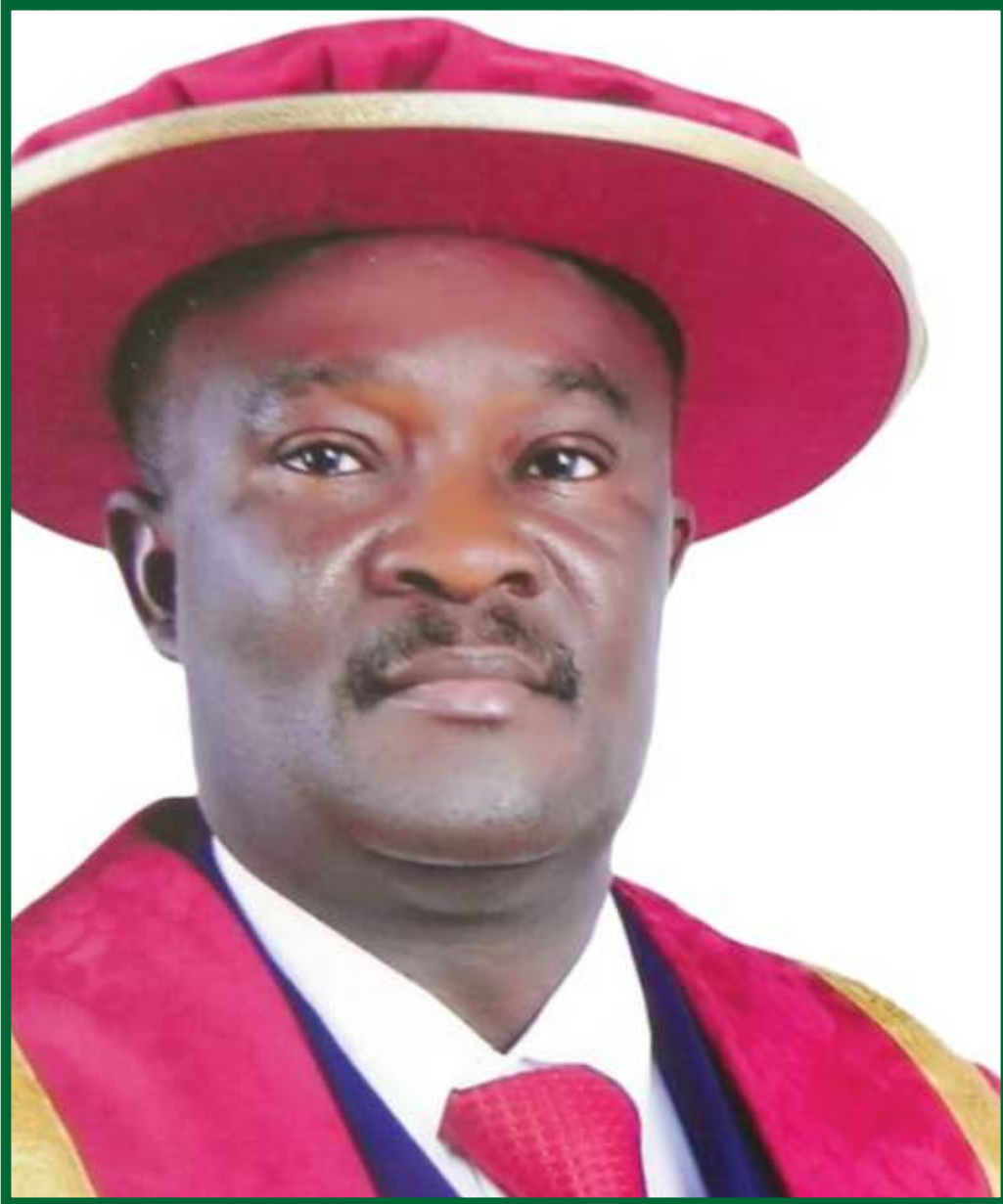
**Hon. Minister of Environment
Federal Ministry of Environment**

Guest of Honour



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Prof. Vincent Tenebe

**Vice - Chancellor
Taraba State University**

Chairman of The Occasion



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Maureen Ellis

Executive Director

International Federation of Biosafety Associations



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Alh. Usman Nga-Kupi

THE SA'PEYI OF GARKI



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Dr. A. A. Denloye

President

Nigerian Biological Safety Association (NiBSA)

Host

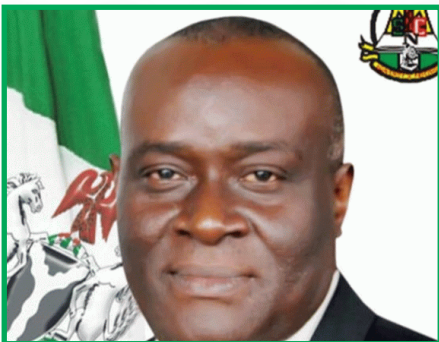


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SPEAKERS



PROF. OLUFEMI D. OLALEYE
Principal Investigator of the University
of Ibadan MEPIN Program
KEYNOTE SPEAKER



DR. TOSAN ERHABOR
Registrar/CEO MLSCN
Sub Theme Speaker



DR. (MRS.) YESIDE ABIODUN OYETAYO
Rector, College of Insurance and
Financial Management, Lagos

Sub Theme Speaker



DR. DAVID SHAMAKI
Director/CEO, National Veterinary
Research Institute, Vom

Sub Theme Speaker



DR. OLALEKAN AKINBO
Senior Program Officer, African Biosafety Network
of Expertise (ABNE), Ouagadougou, Burkina Faso

Sub Theme Speaker



PROF. DJIBRIL SANGARE
President, Malian Biosafety and
Biosecurity Association

Sub Theme Speaker



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WELCOME ADDRESS DELIVERED BY DR. (MRS.) STELLA NGOZI UDO CHAIRMAN CONFERENCE ORGANIZING COMMITTEE

PROTOCOL

It is with great pleasure that I welcome you all to this conference of our noble Association the Nigeria Biological Safety Association on the occasion of our Regional Conference tagged “THE ROLE OF BIOSAFETY AND BIOSECURITY IN NATIONAL AND REGIONAL DEVELOPMENT. This year's conference is the 2nd annual scientific conference of the association and has been packaged to make positive impact scientifically and socially providing a platform for exchange of ideas and proffering solutions to numerous biosafety and biosecurity issues within the west African Region and the World at large. From conception, planning and execution, our watchword has been Safety and security for all both in health, environment, agriculture, engineering, education, law etc. (BIOSAFETY AND BIOSECURITY IS EVERYONE'S BUSSINESS)

The theme of the conference was carefully selected to Xray the enormous role of Biosafety and Biosecurity mitigations in enhancing public confidence and free trade within the region which invariably impacts on development.

The global concern for emerging and re-emerging human, animal and crop diseases calls for action in gap analyses, policy formulation and interventions geared towards creating a safe and secure environment for national and regional growth.

The Nigeria Biological Safety Association has over the years in conjunction with our partners contributed in no small measure in trainings to strengthening the knowledge base of different professionals in the area of Bio-risk management, transport/shipping of infectious substance and mentoring many who work directly with infectious agents and toxins to practice safely and securely while advocating for stronger administrative involvement.

This noble association under the leadership of Dr Abiodun Denloye will stop at nothing to engrave in the minds of all in the position to make a change the need to put Biosafety and Biosecurity on the priority list in achieving Global Health.

The speakers during this conference were carefully selected as men and women with the expertise to do justice to the theme and sub-themes. You will be having a 360 degrees intellectual discourse.

I strongly believe that all that travelled from far and wide to attend this conference came because of the passion and interest you have in strengthening Biosafety and Biosecurity at national and regional level.

Distinguished ladies and gentle men, I urge you to take advantage of this opportunity and network, socialize and enjoy the hospitalities that are provided.

Abuja is our Nigeria's Best Capital City, serene and secure with memorable sites and places of interest. Please make out time to enjoy the sounds and splendor of the city.

Thank you

Stella N. Udo, Ph.D. FMLSN, FNiBSA.

Chairman, 2019 Conference committee.



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WELCOME ADDRESS DELIVERED BY DR. A. A. DENLOYE THE PRESIDENT NIGERIAN BIOLOGICAL SAFETY ASSOCIATION

PROTOCOL

I welcome you all to this 2nd Annual Conference of the Nigerian Biological Safety Association, 2019

The Theme of this year conference is “The Role of Biosafety and Biosecurity in National and Regional Development”. This theme was carefully chosen due to the global movement towards biosafety and biosecurity as a result of global biological threat that we are all facing in the world today.

This conference will offer us the opportunity to discuss issues, interact and network with stakeholders and participants concerning biosafety and biosecurity in Nigeria, Africa around the globe.

This conference is very unique one as the planning and organization has greatly improved from the 1st conference that we had last year.

I wish to express my profound gratitude to our sponsors, chairman of this occasion, chief host, ministers here present, dignitaries, invited guest, facilitators and all participants.

I also wish to thank the conference planning committee for a proper planning and execution that turn out to be a huge success.

I want to say to all 'ABUJA" is here again, welcome you to the Capital city of Nigeria. Enjoy yourself and stay cool. Thank you and God bless you all.

DR. A. A. DENLOYE

President

Nigerian biological safety Association



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**NIGERIAN BIOLOGICAL SAFETY ASSOCIATION - NiBSA
SECOND ANNUAL BIOSAFETY AND BIOSECURITY CONFERENCE
INTERNATIONAL CONFERENCE CENTRE, ABUJA
18TH - 23RD NOVEMBER 2019**

DESCRIPTION OF PRECONFERENCE COURSES/EVENTS

PRECON 1: BASIC BIORISK ASSESSMENT. This workshop is for early to intermediate learners in the subject of Biosafety/Biosecurity (BSBS). It focuses on introducing participants to understanding the basic theory underlying a biosafety risk assessment and on the other a biosecurity risk assessment. Participants would learn the basic concept of BSBS basic concepts and explore their benefits as well as the challenges involved in carrying them out respectively in both diagnostic and research laboratories. The course would cover brief introductions BSBS risks, discuss the process of assessing risk and then go on to the process of evaluating risk with examples drawn from various institutions, facilities and regulatory scenario. This course is premised on the need for basic awareness of the importance of BSBS risk assessment in the overall process of Laboratory Biorisk Management.

PRECON 1: PRESENTER IS DR. K. O. OCHEI and Facilitator is Mrs. Jummai Kaldapa

PRECON 2: BIOSAFETY IN THE CLINICAL SETTING: This is a course designed to create awareness for the need for Biological safety in hospitals and clinics. The various types of safety risks in clinics and hospitals would be identified with emphasis on safety relating to pathogens, the workers and the workplace as well as patients and visitors to the healthcare establishments. Nosocomial infections, zoonotic diseases and the pathogens from biological wastes would be identified. Relevant safety measures would be identified and the mitigation of identified hazards would be identified. This course is appropriate the staff of hospital settings, patients and visitors in hospitals.

PRECON 2: PRESENTER IS ALHAJI MUSA BUKAR and Facilitator is Mr. AJEVOLE JEROME

PRECON 3: PATHOGEN INACTIVATION METHODS FOR LABORATORY APPLICATIONS : This is a course designed for students who are keen on developing skills for decontamination procedures. The students would receive instructions on types of decontamination procedures commonly used to decontaminate objects, surfaces and structures that biological agents have been deposited. The benefits and limitation of each method of pathogen inactivation methods would be discussed. Participants would be led in developing standard operating procedure (SOP) for pathogen inactivation procedure.

PRECON 3: PRESENTER IS DR. BOLA OYEFOLU and Facilitator is Mrs. Anyaegbu, P. N.

PRECON 4: EMERGENCY RESPONSE FOR TRANSBOUNDARY AND EMERGING DISEASES. Participants would be exposed to the hazard identification and outbreak potentials in respect of pathogens of humans and animals (including swine, cattle, poultry and captive animals in zoos, homesteads and other holdings. There would be discussions on the incident response planning and preparation process as well as in developing draft incident response. Some case studies would be used as scenarios.

PRECON 4: PRESENTER IS DR. BAMIDELE IWALOKUN and Facilitator is Ms. Gloria Michael

PRECON 5: INTERNATIONAL FEDERATION FOR BIOSAFETY ASSOCIATIONS (IFBA) PROFESSIONAL CERTIFICATION EXAM. Among the objectives of NiBSA is the professionalization of the discipline of Biosafety and Biosecurity (BSBS). In order to achieve this NiBSA provides her members with various training that improves their service delivery and enhance the practice of BSBS. The annual conference of NiBSA provides a platform for the members to get evidence for their professional quality through taking certification examination conducted by the global body, the IFBA. Twenty six NiBSA members are IFBA Certified Professionals (www.internationalbiosafety.org/certification/directory-of-certified-individuals/). As done during the 2018 conference, NiBSA is partnering with IFBA who is in turn interfacing with funding organizations to deliver the professional certification exam. Priority would be given to candidates writing for Professional Certification in



Biorisk Management, but candidates may be considered for other four subject areas namely Professional Certification in Biosecurity, Professional Certification in Biological Waste Management, Professional Certification in Biosafety Cabinet Selection and Installation and Safe Use and Professional Certification in Biocontainment Facility Design, Operations and Maintenance. More details on the certification exam can be accessed from the IFBA Website www.internationalbiosafety.org/certification. Limited scholarship opportunity would be available for this exam. Self sponsored candidates may also be considered on demand.

PRECON 5: PROCTOR – DENLOYE, A. A. and Proctor Assistant is Dr. Juliet Joseph

PRECON 6: LABORATORY ACQUIRED INFECTIONS AND EXPOSURE ROUTES. The course focuses on Laboratory Acquired Infections (LAI) as a result of occupational exposure to pathogens. This course will review the history, causes, prevention and management of LAIs with case reports. The delivery will cover a discussion of the routes of exposure in cases of LAI.

PRECON 6: PRESENTER IS PROF. ALIYU DUTSINMA and Facilitator is Bukar T. Uwajim

PRECON 7: LABORATORY WASTE MANAGEMENT. The course will present an overview of the types of biological wastes generated in the laboratory with the methods employed to collect, store and treat them so that they are no longer biohazardous. Participants would be led to discuss biological waste management in brought terms with some specific examples.

PRECON 7: PRESENTER IS DR. ANTHONY ABRAHAM and Facilitator is Sarah N. Kase

PRECON 8: WEST AFRICAN BIOSAFETY/BIOSECURITY NETWORK (WABNet). This is a Preconference Event holding on the fringes of the Second NiBSA Conference on the premise of a growing need for harmonized training and delivery of relevant regulations guiding health provisions and biosafety in Nigeria. With great support from the West African Health Organization (WAHO) and reliance on IFBA, the workshop is a strategic planning meeting aimed at launching WABNet after setting the agenda, priorities, funding. Participation in this meeting is strictly by invitation. Only invited participants can register and attend this meeting.

PRECON 9: BIOSAFETY/BIOSECURITY ISSUES IN PLANT BREEDING AND TISSUE CULTURE. The focus of this is issues relating to biohazards, accidents and near misses relating the work about plant breeding and tissue culture. Mitigation measures would also be discussed.

PRECON 9: PRESENTER IS PROF. S.C MAKINDE and Facilitator is Haji Hajara Yusuf

PRECON 10: BIOETHICS IN DIAGNOSTICS AND RESEARCH. This workshop takes on bioethics as a subject important for use in the responsibilities of scientists to act and operate in ethically acceptable manner and with integrity to fellow scientists and the larger community as well. It would serve as a foundation for responsible conduct of individuals as they rise through the ranks for research and diagnostics. Participants will receive awareness of situations that can be encountered in the broad laboratory business setting. This workshop is for those who have been involved in lab-based scientific research and in diagnostics.

PRECON 10: PRESENTER IS PROF. GEORGINA MWANSAT and Co-Presenter is CMD Kantiyok

PRECON 11: SHIPPING INFECTIOUS SUBSTANCES AND BIOLOGICAL SPECIMENS. Participants would be introduced to shipping dangerous goods. Focus would be on how to correctly classify, package, mark, label, and complete the relevant paperwork to ship infectious substances and other biological materials either from the laboratory or from the field. The course involve in-course examination. Participants who complete the course successfully and pass the final exam would receive certification as per International Air Transport Agency (IATA) regulations.

PRECON 11: PRESENTER IS DR. EASTER N NWOKAH and Co-Presenter is DR. STELLA UDO. Facilitator is Mr. Oloyede Whingan, Dr. Abiodun Denloye



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THE OPENING CEREMONY DAY 1: NOVEMBER 21, 2019

8:00 AM - 09:00 AM	Registration
9:00 AM - 09:15 AM	Composition of High Table
9:30 AM	National Anthem
9:35 AM - 09:45 AM	Chairman 2019 NiBSA Conference Welcome Address
9:45 AM - 10:00AM	Address by President NiBSA
10:00AM - 10:15AM	Opening Remark by Chairman of the Occassion Prof. Vincent Tenebe ,Vice Chancellor Taraba State University.
10:15AM - 10:30AM	Music Interludes
10:30AM - 11:15AM	Keynote Address by Prof. David Olufemi Olaleye College of Medicine, University of Ibadan, Oyo State Theme:- The Role of Biosafety and Bio Security in National and Regional development.
11:15AM - 11:30AM	Address by the Special Guest a honour. Hon. Minister of Health Dr. Osagie Ehanire
11:30AM - 11:45AM	Remarks by the Guest of Honour, Hon. Minister of Environment Dr. Muhammed Mahmood
11:45AM - 12:15PM	Good will Messages.
12:15PM - 12:30PM	Photo Session with Guests
12:30PM - 1:15PM	Tea Break
1 st Plenary Session	
1:15 - 2:00PM	The Place of Insurance in Biosafety and Biosecurity - Dr. (Mrs.) Yeside Abiodun Oyetayo
2:00PM - 2:45PM	The Role of Biosafety and Biosecurity in the Control of Zoonotic Disease - Dr. David Shamaki
2:45 - 3:45PM	Oral Presentation
3:45 - 4:00PM	Lunch
	Closing



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CONFERENCE CONTINUES Day 2: November 22, 2019

2nd Plenary 9:00 AM - 9:15 AM	Arrival of Delegates to Conference
9:15 AM - 09:45AM	Sub Theme: Biosafety and Biosecurity in the use of Modern Biotechnology - Dr. Olalekan Akinboo
9:45 AM - 9:55AM	Questions and Answer
9:55AM - 10:40AM	Sub Theme: Laboratory Biosafety and Biosecurity Training and Practices A panacea for Safe Work Place Guest Speaker: Dr. Tosan Erhabor Registrar/CEO - Medical Laboratory Science Council of Nigeria
10:40AM - 10:50AM	Questions and Answer
10:50AM - 11:35AM	Genetically Modified Arthropods and Biosecurity Implications Dr. Djibril Sangare
11:35AM - 11:45AM	Questions and Answer
11:45PM - 12:30PM	Tea Break
12:30PM - 1:30PM	Abstract Presentations
1:30PM - 1:40PM	Questions and Answer
1:40PM - 2:25PM	Abstract Presentations
2:25PM - 2:35PM	Questions and Answer
2:35PM - 3:20PM	Lunch
3:20PM - 4:05PM	Abstract Presentations
4:05PM - 4:15PM	Questions and Answer
4:15PM - 4:30PM	Vote of Thanks
4:30PM - 6:00PM	Annual General Meeting (AGM)



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ABST_NIC_19_001

Effect of Adequate Enforcement of Biosafety and Biosecurity in Schools Laboratories: A Panacea to future biohazard.

Oshinowo, A¹

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Biosafety is used to protect from harmful incidents. Many Laboratories handling biohazards employ an ongoing risk management assessment and enforcement process for Biosafety. Failure to follow such protocols can lead to increased risk of exposure to biohazards or pathogens. Biosafety has also become a global concern and requires multilevel resources and international collaboration to monitor, prevent and correct accidents from unintended and malicious release and also to prevent grooming potential bioterrorists who may get their hands on biologics samples to create biologics weapons of mass destruction. This paper discussed how application of knowledge, techniques and equipment of Biosafety may prevent personal, laboratory and environmental exposure to potential infectious agents or biohazards in Schools and colleges. This write up also proffer some recommendations: There should be regular training and supervision for laboratory personnels. Also, government should ensure adherence to safety protocols in Schools and colleges by setting up a supervisory department.

Keywords: Biosafety, Laboratories, Biohazards, Environmental, infectious

ABST-NIC-19-002

Effective administration of food safety and security hinges on reliable, robust and rapid analytical methods for the detection and quantification of toxins in food.

Raphael E. Teme^{1*}, Sam E. Tohill², Sarah de Saeger³ and Marlies Decler⁴

^{*}Department of Medical Laboratory Science Rivers State University, Port Harcourt

¹*Corresponding Author: ratems@outlook.com

This appears to be the first time an analytical method has incorporated a technique for the simultaneous determination of both bacterial and fungal biotoxins. This project adopted a time- and cost-saving, highly sensitive as well as selective method for the investigation of multiple biotoxins in food and feed. The project aim was achieved by the determination of appropriate sample purification technique with optimised LC-MS/MS conditions. Cereulide, the emetic *Bacillus cereus* endotoxin and two of the emergent fusariotoxins, beauvericin and enniatin subtypes A, B, A1, & B1 are all depsipeptides that share similar chemical, pharmacological and biological properties. Cereals are the common food matrix frequently contaminated by these six depsipeptides, hence the need to develop a method for their simultaneous analyses in keeping with the EFSA recommendation. The study evaluated effective ways of sample preparation with optimised UPLC conditions as well as MS parameters for the combined determination of the listed biotoxins in maize samples. Matrix effects were evaluated and defatting protocols developed to minimise the effects, especially on cereulide, to acceptable levels. Acetonitrile/water (84:16, v/v) gave optimal extraction results for the toxins and showed linear curves with increased toxin concentration. Signal suppression on cereulide was resolved with purification step using SPE on Silicon sorbent with elution in 2mL ACN which gave 83-100% recovery of all analytes. Data capture utilised the MassLynx software. This work requires further optimisation on other food matrices such as rice, wheat and rye. Method validation is also necessary after further optimisation on other matrices. Cues from this method may be employed in the development of a biosensor for rapid analyses of biotoxins in food at storage sites and in the field.

Keyword: Toxins, depsipeptides, analytes, cereal,



ABST-NIC-19-003

Novel pectin from *Parkia biglobosa* pulp mediated green route synthesis of hydroxyapatite nanoparticles

Hassan A.B¹, Mishak L. & Ebozoje J.

Physics unit, SLT Dept., School of Science and Technology, Federal Polytechnic, Kaura – Namoda, Zamfara State Nigeria

1*Corresponding Author: hassanadebayobamidele@gmail.com

Hydroxyapatite (HAP) nanoparticles were synthesized using pectin from pulp of *P. biglobosa* as green template. This was achieved at different concentrations (0.1, 0.5 and 1%) of pectin. The HAP nanoparticles mediated by pectin were characterized using Fourier Transform infrared (FTIR), Scanning electron Microscopy (SEM) and X-ray Diffraction (XRD). Structure and morphology of the synthesized HAP indicate that discrete and less agglomerated particles were produced at low concentration (0.1%) of pectin. The HAP nanoparticles produced, with crystallite size ranging from 17.5 to 26.3 nm, inhibited the growth of selected bacteria used for the study. Findings from this study suggest that *P. biglobosa* pulp pectin can serve as a green template for the production of HAP nanoparticles which are considered to be promising and versatile bioactive materials in enzyme technology, biomedical and tissue engineering

Keyword: Hydroxyapatite, nanoparticles, *P. biglobosa*, enzyme technology, tissue engineering

ABST-NIC-19-004

Assessment of ICT-Based Innovations in Primary Healthcare Delivery in Southwestern Nigeria

Babatunde. S. Asenuga¹, Titilayo O. Olaposi², Joshua B. Akarakiri²

1. Wesley University, Ondo,

2. Obafemi Awolowo University, Ile-Ife.

1*Corresponding Author: asenugatunde@gmail.com

This study investigated the recently adopted information communication and technology (ICT) based innovations in the primary healthcare sector and also examined the extent of use of adopted ICT-based innovations in primary healthcare delivery in Southwestern Nigeria. This study covered thirty (30) primary healthcare centres selected from Lagos, Ogun and Oyo States across Southwestern Nigeria using multistage sampling technique. Primary data were collected using 2 sets of questionnaire administered on 30 heads of healthcare centres and 180 health workers as well as interviews. The study revealed that eight (8) distinct types of ICT-based innovations: Computer, phone and tracker, digital weight scale, digital centrifuge and nebulizer machine, digital blood pressure apparatus, digital thermometer, solar refrigerator and oxygen concentrator, digital microscope and electronic contraceptives and DBS Fax result printer were introduced and adopted for use. The study further showed that staff training was rated high among the factors that led to the adoption of ICT-based innovation in the Primary Healthcare Centres. Four strategies (Parallel, pilot, phased and plunge strategies) were used for the implementation of the adopted ICT-based innovations in the primary healthcare centres. Analysis showed that academic qualification and professional qualification were significant.

Keywords: ICT-Based Innovation, Primary healthcare centres, Implementation Strategy, Innovation knowledge, Nigeria healthcare delivery.



ABST-NIC-19-005

Incidence of Malaria Infection Caused by Different Species of *Plasmodium* among Pregnant Women Attending Antenatal Clinic at Umaru Shehu Ultra Model Hospital, Maiduguri

Ibrahim Muhammad^{1*}, Aliyu Isa², Ibrahim Musa³, Abdul'aziz Ibrahim Muhammad⁴, Alhaji Modu Bukar⁵ and Amina Bukar Majama⁶
Department of Science Laboratory Technology, Ramat Polytechnic Maiduguri, Nigeria

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The incidence of malaria infections caused by different species of *Plasmodium*: *P. falciparum*, *P. malariae*, *P. ovale*, and *P. vivax* which causes malaria in human was evaluated. This study aimed to determine the incidence of malaria infections caused by different species of *Plasmodium* in pregnant women attending the antenatal clinic in Umaru Shehu Ultra-Modern Hospital Bulumkutu, Maiduguri. A total of 50 pregnant women were bled, 2ml of blood collected each and screened for *Plasmodium* species and for which, a total of 36 (72%) were positive. Of these, 34 (68%) were positive for *Plasmodium falciparum* with only 2 (4%) being positive for *Plasmodium ovale*. Among the total pregnant women screened, 16/50, 13/50 and 21/50 were in their first, second and third trimesters respectively while; 14 (87.5%), 10 (76.9%) and 12 (52.1%) were found positive for malaria parasites as well in that order.

The results showed high incidence of malaria parasite among pregnant women attending the ante-natal clinic in Umaru Shehu Ultra-Modern Hospital Bulumkutu, Maiduguri. *Plasmodium falciparum* has been implicated to play a vital role among pregnant women, causing most cases of miscarriage in the community however, there is dearth of documented information in this regard in the community. It is therefore a necessity to conduct an evaluation of the incidence of malaria parasitaemia among pregnant women in this community with a view to stemming the menace caused by malaria in this community.

Keywords: *Plasmodium* species, malaria, pregnant women, blood, parasitaemia

ABST-NIC-19-006

The Awareness Level of Bio-risk Management Practices in Gombe State Specialist Hospital, Gombe

Nneka, P.A., Famoriyo, L.A., Kudi, A.A., Ibrahim H., Aliyu, S.I., Ibrahim Y., Ahmed M.S., Yahaya S.R., Muazu I.S. and Abdullahi I.
Laboratory Department, Gombe State Specialist Hospital, Gombe State, Nigeria

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Majority of procedures in health facilities are associated with risks. Most hospital acquired infections are contracted through unsafe practices. The study was designed to assess the awareness level of bio-risk management practices in Gombe State Specialist Hospital. It is aimed to identify gaps and evaluate bio risk management practices in the hospital to keep the workers and community safe from exposure to infectious agents. Two hundred healthcare providers from 19 units of Gombe State Specialist Hospital participated in the survey within the period of March to July, 2019, using a standard checklist.

The baseline bio-risk assessment was conducted to find out the personnel awareness level. Bio-risk trainings were conducted to close the gaps identified.

The follow-up assessment after the third month showed improvement in the level of awareness of bio-risk management among the healthcare providers. There is need for periodic assessment of bio-risk management in health facilities.

Keywords: Bio-risk management, Awareness, Assessment, Gombe, Nigeria



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ABST-NIC-19-007

Diagnostic Techniques of Helicobacter Pylori DNA in Human Faeces and Water With Different Levels Of Faecal Pollution In Gashua Town

Dagona, A.G.¹, Dagona, I.G.², Garba³ and Ahmad, A.G.⁴.

Department of Biological Science, Federal University, Gashua, Yobe State, Nigeria^{1,2,4}

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This study was carried out to determine the role of water in the faecal transmission of *Helicobacter pylori* by detecting the DNA in human faecal samples and environmental water samples with a range of faecal pollution from the Gashua town. Polymerase chain reaction (PCR) was used to detect *H. pylori* in stools and water, both matrices with a complex biota. DNA was detected using highly specific primers of an ureA gene fragment. In addition, antigens were used to detect the bacteria in stools. *Helicobacter pylori* were detected in 53% of 150 human faecal samples and in 66% of wastewater samples, and 11% of river samples, but in none of the spring waters samples. Faecal pollution of the aquatic environment was tested analysing the presence of microbial indicators. We found the presence of *H. pylori* DNA in stools and in aquatic environments with different levels of faecal pollution from the Gashua Town of Yobe State. This study reveals higher positive samples obtained in the more faecally polluted waters. These data indicate that water may be a vector of *H. pylori* in its faecal– oral route. Our future research will focus antibiotic resistance of *H.pylori* and application nanoparticle like liposomes and various inorganic nanoparticles as effective vehicle for drug delivery to enhance the therapeutic effectiveness of existing antibiotics which faces significant challenges, particularly the emergence of antibiotic resistance in treatment of *H. Pylori* infection.

Keywords: *E. coli*, faecal sample, indicators, *H. pylori*, PCR, sewage water

ABST-NIC-19-008

Assessment of Biosafety and Biosecurity Knowledge and Perception of Laboratory Workers in the University of Maiduguri

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The University of Maiduguri has over forty (40) laboratories that handle biological agents. These biological agents pose various level of risks to the staff and other laboratory users who may not be aware of the dangers. The goal of the survey was to assess the knowledge/ perceptions of laboratory workers relative to BRM programs. A Biorisk survey questionnaire was developed and administered to 150 laboratory workers on one-on-one basis, after obtaining their consents. Of the 128 respondents that returned their questionnaires, 93 were laboratory scientists/technologists, 19 were technicians/assistants, 5 were lecturers, 3 were research officers and 1 was a health assistant. 33% of the respondents have greater than 20years working experience in the laboratory, 13% have worked between 16-20years, 9% (11-15years), 27%(6-10years) and 18%(less than 5years). On training, 54.7% of respondents agreed they had basic biosafety training while 45.3% had no training. For biosecurity, 61.7% had no training while 38.3% had basic training. By definition, 105 of the respondents were able to identify the correct definition of biosafety, 18 were wrong while 5 were unsure. On the other hand, 74 respondents defined biosecurity correctly, 37 were wrong and 17 were unsure. Generally, the level of perception of biosafety and biosecurity among laboratory workers in the University of Maiduguri is low and there is need to raise awareness on Biorisk Management in the University of Maiduguri.

Keywords: Biosafety, Biosecurity, Biorisk, Laboratory, Survey



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ABST-NIC-19-009

Antimicrobial Activity of Ethanol and Aqueous Extracts of *Boswellia Dalzielii* Against Enteropathogenic *Escherichia Coli* and *Shigella Dysenteriae*

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Ethanol and aqueous extracts of stem bark of *Boswellia dalzielii* was used to determine the phytochemical and antibacterial activity against enteropathogenic *E. coli* and *S. dysenteriae*. The extraction was carried out following the standard method of Gupta et al.,(1996), the phytochemical screening was carried out through standard procedures and the extracts were further tested for antimicrobial activity using agar well diffusion method. Minimum Inhibitory Concentration and Minimum Bactericidal Concentration were also determined. Ethanol extract has the highest percentage yield of 22.26, the phytochemical tests revealed the presence of saponins, tannins, flavonoids, terpenoid, glycosides, alkaloids, triterpenes, phenols and proteins. Antimicrobial activity shows that ethanol extract has the highest mean zone of inhibition of 17.67mm and 17.00mm at the highest concentration (250mg/ml) against *S. dysenteriae* and *E. coli* respectively, both test organisms were resistant to all concentrations of aqueous extract except at the highest concentration. MIC of aqueous extract was 250mg/ml and MBC of 500mg/ml on both the test organisms.

The study shows that *Boswellia dalzielii* stem bark ethanol and aqueous extract contain bioactive components which are responsible for its antimicrobial activities and may have the potential for the development of plant source drugs against diarrhea causing *E. coli* and *S. dysenteriae*.

Keywords: *Boswellia dalzielii*, phytochemical, *Escherichia coli*, *Shigella dysenteriae*, Antimicrobial.

ABST-NIC-19-010

Parasitological Evaluation of Roselle Juice (zobo) Sold in Jos Metropolis

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Roselle juice is a red non-alcoholic local beverage made of aqueous extract from dried Roselle calyx and petals locally called “zobo”. This study evaluated the contamination of intestinal parasites in Roselle Juice (“zobo” drink) sold within Jos metropolis. This was informed by the high rate of consumption of the local juice by the populace. The study was carried out between March and August 2019. A total of 84 locally and commercially prepared “zobo” samples from six open markets (Farin-Gada, Yandoya, AngwanRukuba, Rikkos, New market and Terminus) located within Jos metropolis were randomly collected. Half (50%) of the sellers at each market were sampled three different times. Samples were examined using sodium chloride floatation technique and sediments were microscopically examined for the presence of parasitic pathogens using standard procedure.

Parasitic cysts and ova of *Entamoeba histolytica*, *Giardia lamblia* and *Ascaris lumbricoides* were isolated from some of the juice sampled. Highest contamination rate was 21.43% from Farin-Gada market and lowest contamination rate was 14.29% from AngwanRukuba Market. Cysts of *Entamoeba histolytica* were highest with 54.76% while that of *Giardia lamblia* was least with 7.14%. However, the number of parasites isolated from the different locations did not significantly differ statistically.

The results of this study indicate that most of the locally produced drinks being hawked in Jos markets and other surrounding public places may be contaminated with parasitic agents and are therefore of public health concern.

Keywords: Roselle juice, Zobo, *Entamoeba histolytica*, *Giardia lamblia*, *Ascaris lumbricoides*



ABST-NIC-19-011

Prevalence and Assessment on Trend of Dissemination of Some Neglected Tropical Parasitic Diseases in Maiduguri Abattoir, Borno State, Nigeria

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The study aims to record and update the prevalence and the trend of dissemination of some zoonotic parasites that served as etiologic agents to some neglected tropical parasitic diseases (Fascioliosis) in Maiduguri central Abattoir, Borno State during the period from January, 2017 to April, 2019. A total 100 Sheeps slaughtered in the Maiduguri central Abattoir were examined for the presence of *Fasciola* species based on morphological and morphometric parameters. The physical inspection of the liver indicated that 46(46%) of the sheep examined were infected with fluke burden of 456. While among the 63 male examined 29(46.0%) with fluke burden of 305 were recorded, whereas, 37 female examined 14(37.8%) with fluke burden of 100 were recorded respectively. Likewise, 88 Adult sheep infected 42.0% with 391 fluke burden, while 12 Young sheep were infected 50.0% with a 65 fluke burden. Whereas among the breeds, Uda 27 were examined with 40.7% infected and a fluke burden of 186, while 33 Balami examined with 66.7% infected with a fluke burden of 204 and 40 Yankasa examined with 25.0% infected with fluke burden of 66 respectively. The identification of the fasciola species based on their morphological and biometric size and predilection site revealed that *Fasciola hepatica* was identified as having a mean size of 2.0x3.0 mm with the liver as the predilection site. While *Fasciola gigantica* has 3.5x 4.0 mm after well pressed between two slide prior to measurement.

Key words: Morphometric, prevalence, Abattoir, tropical diseases, Neglected, Assessment



ABST-NIC-19-012

Prevalent Hepatitis B Virus Genotypes Circulating among HIV Co-Infected Patients in an Urban City, South-South Nigeria

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The study aims to record and update the prevalence and the trend of dissemination of some zoonotic parasites that served as etiologic agents to some neglected tropical parasitic diseases (Fascioliosis) in Maiduguri central Abattoir, Borno State during the period from January, 2017 to April, 2019. A total 100 Sheeps slaughtered in the Maiduguri central Abattoir were examined for the presence of *Fasciola* species based on morphological and morphometric parameters. The physical inspection of the liver indicated that 46(46%) of the sheep examined were infected with fluke burden of 456. While among the 63 male examined 29(46.0%) with fluke burden of 305 were recorded, whereas, 37 female examined 14(37.8%) with fluke burden of 100 were recorded respectively. Likewise, 88 Adult sheep infected 42.0% with 391 fluke burden, while 12 Young sheep were infected 50.0% with a 65 fluke burden. Whereas among the breeds, Uda 27 were examined with 40.7% infected and a fluke burden of 186, while 33 Balami examined with 66.7% infected with a fluke burden of 204 and 40 Yankasa examined with 25.0% infected with fluke burden of 66 respectively. The identification of the fasciola species based on their morphological and biometric size and predilection site revealed that *Fasciola hepatica* was identified as having a mean size of 2.0x3.0 mm with the liver as the predilection site. While *Fasciola gigantica* has 3.5x 4.0 mm after well pressed between two slide prior to measurement.

Key words: Morphometric, prevalence, Abattoir, tropical diseases, Neglected, Assessment



ABST-NIC-19-013

Measles and cholera outbreak in security volatile states of Adamawa & Borno.

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Measles and cholera are both major public health issue, though preventable. Measles is a very high viral and infectious health condition and vaccine preventable disease. Cholera is an intestinal infection that could be endemic, epidemic and pandemic. Both measles and cholera remains vital cause of morbidity and mortality especially in under 5 children. Long-term Boko Haram (a terrorist organization) insurgency has led to tremendous displacement of many individuals and families into overcrowded Internally Displaced Persons (IDPs) camps. This security problem has led to serious public health issues such as outbreaks of measles and cholera in most of these states, either owing to poor health facilities, overcrowding in the IDPs and inability of health workers to go into these areas to vaccinate. This study was undertaken to examine the effect of compromised security and the magnitude of measles and cholera outbreaks. Case-controlled and reviews were done for measles and cholera respectively. Data for reviews were gotten from Integrated Disease Surveillance Response (IDSR) line lists of the affected states. For cholera, about 6,000 cases and 150 fatalities reported with overall case fatality rate (CFR) of 2.5%, transmissibility was due to poor sanitation and hygiene. Measles in Adamawa state had a total of about 4,000 cases and children under 5 were the highest with about 50% of the total cases in a 5year period, 25 deaths with CFR of 1.25% in the under 5. In Borno state, case-controlled study was carried out on the measles cases. Demographic data and blood samples were done. Result showed that contact with measles cases was found to be the most important factor for transmissibility (Adjusted odds ratio (AOR): 4.33, confidence interval (CI): 1.85-10.14) in about 770-recorded cases. A single measles/cholera case exported out of the affected areas to an otherwise unaffected environment could cause a further public health challenge.

Keywords: Measles, Cholera, Boko Haram, Insurgency, IDPs.



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ABST-NIC-19-014

16S rRNA and Metagenomics Sequence Analysis of Diarrhoeic Stool Samples.

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Molecular approaches characterise microorganisms that conventional methods of bacteria identification are unable to. And this gives more information on the microorganism's behaviour, prevents further spread of a disease if they are pathogens, enrich database and present more opportunities for biotechnology development. This study was done to solve the limitations of the conventional methods of characterising microorganisms associated with diarrhoea, identify the causes of resistance to antibiotics for treatment and check for their biodiversity and inter relatedness using 16S rRNA sequence analysis and Metagenomics. Diarrhoeic stool samples were inoculated using standard procedures. Plasmid DNA and 16S rRNA gene were extracted and amplified using specific primers. Sequencing and biodiversity were analysed. The existence of 2767 taxa in the human gut of which 2073 were unknown or unassigned was confirmed using 16S rRNA metagenomic sequence analysis as compared to 8 bacteria isolated using the conventional method of bacteria identification. There was high level of multidrug resistance with the detection of SHV, CTX-M and OXA resistance genes. It can be concluded that *Escherichia coli*, *Klebsiella pneumoniae*, *Staphylococcus aureus*, *Pseudomonas* species, *Vibrio* species, *Bacillus* species, *Salmonella* species and *Clostridium* species are bacteria responsible for diarrhoea in Rivers State. There is high level of multi drug resistance to the commonly used antibiotics for treatment as a result of the presence of resistance genes SHV, CTX-M and OXA. The number of bacteria in the gut of diarrhoeic people far exceeds that isolated using the conventional method and majority of them are new and unassigned..

Key words: 16S rRNA, Plasmid DNA, Sequence analysis, Metagenomics, Bacteria



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ABST-NIC-19-015

Antibiogram of Bacterial Isolates from some Adult Patients' Samples in a Tertiary Hospital in Rivers State, Port Harcourt, Nigeria

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Antibiogram is an overall profile report of an antimicrobial susceptibility testing to a particular bacteria isolate to antibiotic drugs. It aid in selecting antibiotic therapy and monitoring resistance trends overtime within a tertiary hospital. The global point survey of 2018 showed that inappropriate antimicrobial therapy is a determinant factor in evolution of resistance and this requires hospital antibiotic stewardship. The aim of this study is to examine the antibiogram of bacterial isolates from some patients' samples in a tertiary hospital in Rivers State, Port Harcourt, Nigeria. The study was conducted at Rivers State University Teaching Hospitals. A data from the microbiology record book was collected, five hundred urine samples and 250 wound swabs of adult patients, 168 were male and 316 were female. Of the five hundred urine samples cultured, one hundred and seventy four ($174/500 = 34.8\%$) yielded bacteria growths, the result shows that *Staphylococcus. Spp.* 76= 44%, *Escherichia coli* 60 =34.0%, *Streptococcus. Spp.* 5 = 3%, *Proteus spp.* 2 = 1%, *Klebsiella spp.* 2 = 1%, Coliforms 29 =17%). In the sensitivity testing activity, *Staph. Spp* were susceptible to ciprofloxacin, intermediate to erythromycin and resistant fortum, gentamicin, kamalox and cefuroxime. *Klebsiella spp.* is sensitive to only nitrofurantoin and resistant to all other antibiotics that were used. *Strept. spp.* is intermediate to erythromycin and resistant to others. *E. coli* is sensitive to nitrofurantoin and ciprofloxacin and resistant to other antimicrobial drugs used. In wound swab samples, of 83 bacteria isolation obtained, *Staphylococcus. spp.* 44 (53.0%), Coliforms 25 (30.0%), *Escherichia coli* 8(10.0%) and *Proteus spp.* 6 (7.0%). The antimicrobial sensitivity activity in wound swab showed *E.coli* is 100% susceptible to ciprofloxacin, ofloxacin, 50% intermediate to kamalox and resistant to other microbial drugs used. *Proteus spp.* is susceptible to ciprofloxacin and Penicillin, intermediate to ofloxacin and resistant to other antimicrobial drugs used. The antibiogram from the result of the antibiotic activity showed that in urine and wound swabs there are highly resistant strains of bacterial isolates. Training of Laboratory personnel in sterile collection of samples, strictly microbiology protocols, antimicrobial stewardship policies and protocols are highly recommended in all tertiary hospitals in Rivers State.

Keywords: Antibiogram, Bacterial Isolates, Tertiary Hospital, Rivers State



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ABST-NIC-19-016

AMP Model Towards Waste Management in Teaching and Research Facilities: A case studies of South West, University of Ibadan, Nigeria

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Enforcing waste segregation and treatments prior disposal is at lowest ebb if exists at all in our Educational facilities. Surveys confirm current wastes handling similar to that of Municipal, which is not even in any way close to best practices. Wastes generations, collation, Collections, segregations e.t.c . and other treatments immediate or remote implications are not Known especially by Contractors that often handle these wastes in our facilities. Importance of Biorisks associated with each wastes type and current practices, suggests need for review adopting Assessment, Mitigation and Performance model (AMP), not only Institutional white paper policy document, but also advocacy towards attitudinal change of everybody in facilities . Also adequate training for waste handlers/Contractors and embedding all these as part of accreditation check list.

Keyword: Wastes, Assessment, Mitigation, Performance, Municipal

ABST-NIC-19-017

Hospital-Associated *Sphingomonas paucimobilis* Infection in a Neonate at a Tertiary Hospital in Abuja, Nigeria: A Case Report

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Sphingomonas paucimobilis formerly known as *Pseudomonas paucimobilis* is a strict aerobe, motile, non-spore forming, non-fermentative, Gram-negative bacillus, characterized by catalase and oxidase activities. *Sphingomonas paucimobilis* is ubiquitous in nature and has been isolated from sea water, sea ice, river water, waste water, mineral water and soil. It has also been recovered from diverse sources in the hospital environment, including hospital water system, respiratory therapy equipment, and laboratory instruments. We present a case of a neonate at the special care baby unit, University of Abuja Teaching Hospital, Gwagwalada, Abuja with *Sphingomonas paucimobilis* sepsis. Other laboratory investigations performed such as electrolytes, urea, creatinine and full blood count gave normal acceptable values. However, swab obtained from the environment yielded the same organism, an indication of hospital acquired infection. The study hereby recommends adequate cleaning of special care baby unit of the hospital and equipment used for care with potent anti-pseudomonas disinfectant.

Key words: *Sphingomonas paucimobilis*, Hospital-associated infection, neonate



NiBSA

Nigerian Biological Safety Association

ABST-NIC-19-018

Biosafety and Biosecurity Measures Implemented in a Modular Biocontainment Laboratory

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Biosafety and Biosecurity, otherwise referred to as Biorisk is a combination of the probability of occurrence of harm and the severity of that harm where the source of harm is a biological agent. Biorisks are commonplace in all biological facilities and may pose varying degrees of threat to personnel, visitors and both the ambient and distant environment; depending on the extent of implementation of standard Biorisk Management procedures in such facilities. The Biosafety Levels (BSLs) 2 and 3 biocontainment laboratory established at the Infectious Diseases Hospital (IDH) Yaba, Lagos is a modular facility designed and built to serve as biorepository and research purposes. Being a modular system makes it unique in design, operation and maintenance. Modular laboratories are not commonplace in Nigeria, consequently, the expertise for construction, operation and maintenance; to ensure adequate and sustainable containment is still insufficient in Nigeria. The objectives of this research are to examine the biosafety and biosecurity features embedded in the design, operation plan and maintenance of the newly established BSL 2 & 3 biorepository in IDH Lagos. The researcher is giving an on-site experience of the project especially the construction stage which involved; civil works, mechanical and electrical and laboratory equipment installations. Also, to assess the level of implementation and compliance of personnel and management to the design intent of the facility, the researcher randomly distributed 20 questionnaires among members of staff and management of the facility. The findings indicate that there is need for more personnel training in biosafety and biosecurity to ensure proper and safe operation and maintenance of both medium and high-risk bio-facilities in Nigeria. It's therefore recommended that personnel exposure and training be made paramount in this facility for the successful operation and maintenance of such facilities.

Keywords: Biosafety, Biosecurity, Biocontainment, Laboratory, Modular



ABST-NIC-19-019

Biosafety Risk Assessment and Mitigation Process in TB Diagnosis Laboratory in Federal Teaching Hospital, Gombe

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Federal Teaching Hospital Gombe, is one of the tertiary hospitals in Gombe North East Nigeria established in 2000. A biosafety risk assessment was conducted in the bacteriology unit of Medical Microbiology /Immunology lab where sputum samples are analyzed for the diagnosis of tuberculosis (TB). The characteristic of TB and considering the harm to the laboratory personnel and the surrounding labs and the location wasn't proper. The assessment was done by characterizing and evaluating the biological agent putting into cognizance its route of transmission, potential to aerosolize the specimen, concentration of organisms being manipulated, Type of laboratory procedure being performed, the resistance of the strain to anti tuberculosis agents and the susceptibility of the laboratory worker to infection. At the end of the biosafety risk assessment, it was observed that the procedure deployed for sputum samples analyzed in the bacteriology lab was not according to good laboratory practice. In the characterization of the risk, the likelihood of infection from the agent was moderate but with prolonged exposure it could be high since most times Rif resistance TB was detected. The consequences could lead to exposure and poor performance of staff due to infection. This assessment was done with the laboratory personnel and biorisk management advisor. Having identified the risk level from the assessment conducted, as a way of mitigating the risk, and bringing it to a risk tolerance level to comply with the international and nationally acceptable best practices, proposal for the construction of a separate TB laboratory complex outside the main laboratories was initiated. The hospital top management keyed into the proposal and directed the engineering department to draw up the building design/plan and supervised by the biorisk advisors. This building is to serve as a mitigation control measures in the spread of TB among the staff who are working in the bacteriology laboratory and other staff of the hospital whose health could be impacted by exposure to the TB agents.

Keywords: Tuberculosis, Biorisk, Laboratory, samples



ABST-NIC-19-020

Assessment of Knowledge, Attitude and Perception of Staff Working with Biological Materials in Relation to Biorisk Management in Kaduna State Nigeria

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Understanding the risk associated with working with biological/hazardous materials is fundamental to personal, community, and environmental safety and security. A study was carried out in Kaduna state to access participants' knowledge of BRM and skills in terms of working with biological materials and toxins thus facilitating behavioral change and attitude towards security and risk reduction measures. A structured survey using questionnaires administered to individuals was the data collection method. A total of 227 questionnaires were administered in the three (3) senatorial districts of Kaduna State in the proportion Kaduna Metropolis 141(62.1%), Zaria 47(20.7%) and Kafanchan 39(17.2%). The respondents were from Teaching hospitals, specialist hospitals, research institutes, diagnostic laboratories and clinics whose designations range from Research Officers 20(8.8%), laboratory scientists 118(52.0%), laboratory technicians/assistants 77(33.9%), Science Laboratory Technologists 4(1.8%) and others 8(3.5%). The highest educational qualification among the respondents was Ph.D 6(2.6%) while the least is Medical Laboratory Assistants 10(4.4%). NiBSA members versus Non NiBSA members were 29(12.8%) and 198(87.2%) respectively. Furthermore, 31.3% have had training on biosafety and 68.7% had no training on biosafety. Among the respondents only 37 had been trained while 190 had no training on biosecurity. However, 147(64.8%) of respondents are aware of the Laws guiding biosafety and biosecurity in Nigeria. In addition, 184(81.1%) of respondents have significant knowledge while 43(18.9%) have no basic knowledge of rules and regulations that guides BRM in their laboratories. There was significant correlations($p < 0.05$) between respondents that knew the definition of Biosafety versus Biosecurity, versus those with basic knowledge of rules and regulations that guides BRM, respondents qualifications, as well as those with good laboratory work practice in place. Majority of the respondents have an average level of skills for working with biological materials and toxins in terms of biosafety but have little knowledge of biosecurity. Based on this study, it is evident that there is a gap in terms of BRM which needs to be filled with orientation to BRM.

Keywords: Biosafety, Biosecurity, BioRisk Management, Laboratory.



ABST-NIC-19-021

A Comparative Study of Formalin Ethyl Ether Sedimentation and Zinc Sulphate Floatation Techniques in the Detection of Intestinal Parasites

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Intestinal parasitic infection is one of the major health problems in developing countries. It has been estimated to affects 3.5 billion people globally and 450 million are thought to be ill as a result of such infections, the majority being children. Two methods of intestinal parasites diagnosis were compared in the study in order to come out with a simple, precise, sensitive and affordable method. Intestinal parasitic infections are more prevalent in developing countries and their burden may even be more than that of bacterial infections. The Formal-ether concentration technique has been considered as a gold standard for the detection of most intestinal parasites. A total of 200 faecal samples were collected and each stool sample was examined by: Formal-ether concentration method and Zinc sulphate floatation method. Of the 200 stool samples examined a variety of parasite, include amoebae, cestodes, flagellates, nematodes and Trematodes, were encountered. 51 samples were positive for parasitic infection. The sensitivity indicated that formal ether sedimentation technique has the highest percentage of 25.5%, followed by Zinc sulphate floatation technique with 12.1%. The formalin ether showed a higher sensitivity of 86% for the detection of cysts, ova and larvae, and these methods offered an advantage over the flotation procedure for the detection of some ova. However, the zinc sulphate procedure was more effective for the detection of Protozoan cysts, *Hymenolepis nana* and Hook worm eggs. The result indicate that the formal ether sedimentation method provides a suitable alternative for detection of intestinal parasite, and also demonstrate the value of using both sedimentation and flotation procedures in the analysis of faecal specimen for parasite identification.

Keywords: Zinc sulphate, Intestinal, Formal-ether, Bacterial, Stool



ABST-NIC-19-022

Standard Operating Procedures (Sops) in Handling Grain Preservation in Storage as Prevention for Man, his Livestock, and Environment: A Mitigating Factor

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Grains are still the main source of nutrition for both humans and domestic animals, especially in developing countries. The on-going effects of the food crisis are caused in part by very high losses of grain during storage, which in turn has resulted in the starvation of 925 million people worldwide (FAO), including people who suffer from malnutrition. Sub-optimal storage conditions, post-harvest grain and dry food losses caused by biotic factors (mainly insects and moulds) range from 10%-40%. In addition, harmful mycotoxins may develop that can cause severe damage to human and animal health. Stored product insect pest control" is based mainly on the use of highly effective chemicals (fumigants and protectants). Mould control is also based on the use of chemicals. However, increased health, environmental and social concerns, and the consequent demand for pesticide free food, have led to the development of non-chemical and integrated strategies for stored pest and mould management. Local granaries, cribs and other small stores can be made rodent-proof if the floor is raised to a minimum of 90cm from the ground and if the legs are equipped with conical rat guards made of metal sheets. Do not mix new grain with old. Old infested material should be removed or thoroughly fumigated. Clean the storage structures, machinery and disinfect bags and baskets by sunning or chemical treatment. Large structures will require chemical treatment while smoke may be adequate in small stores. However, wearing complete protective clothes by farmers and post-harvest specialists has been a mitigating factor and a primary concern in developing countries for man, his livestock and environment.

Keywords: Grains, Mycotoxins, Livestock, Environment, Chemical



ABST-NIC-19-023

Evaluation of Degree of Contamination of Different Locations in Selected Laboratories in Rivers State, Nigeria

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All procedures in the diagnostic medical laboratory are not without associated risks. Laboratory personnel handling clinical samples containing highly infectious agents are at a high risk of contracting laboratory-acquired infection. This risk is particularly high for those working in microbiology laboratories. In this study hundred (100) samples were collected from 5 laboratories, 20 samples per laboratory. The samples (from sink, bench surface and door handle) were collected using sterile swab stick and put into normal saline after collection. It was cultured into MacConkey agar and Nutrient Broth and incubated at 37°C for 24 hrs. After incubation, the antimicrobials efficacy was determined by measuring the diameter of zones of inhibition and interpreted as per clinical laboratory standard international (CLSI). From the result obtained, 3 bacteria were isolated namely *Staphylococcus epidermidis* (cocci), *Bacillus subtilis* (rod) and *Staphylococcus aureus* (cocci). The isolated bacteria were all gram positive. A total of 76 isolates were obtained; 22 *Bacillus subtilis*, 17 *Staphylococcus aureus* and 37 *Staphylococcus epidermidis*. 81.8% of the *Bacillus subtilis* was isolated from the sink while 18.2% from the bench. 62.5% of the *Staphylococcus aureus* was isolated from the sink while 37.5% from the bench while 57.9% of the *Staphylococcus epidermidis* was isolated from the sink, 10.5% from the door and 31.6% from the bench. Most of the bacteria were isolated from the sink (67.4%), followed by the work bench (29.1%), and the door (3.5%). The hospital with the highest number of isolated bacteria was University of Port Harcourt Teaching Hospital Laboratory followed by Microbiology Laboratory, Rivers State University. This study has shown that laboratories are site for certain bacteria of pathogenic characteristics, therefore it is recommended that the sink and surface of medical laboratories be properly cleaned and set up using standard safety equipment in medical laboratory.

Keywords: Contamination, Medical, Laboratory, Safety Procedures



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ABST-NIC-19-024

Biosafety and Biosecurity Implications of Migratory Water Birds Species in Nigeria

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Migratory water birds play essential roles as etiological agents in the dispersion of pathogens between species at breeding, wintering, and stopover places where numerous birds of various species are concentrated. Migratory water birds have been exposed to more diverse environment and suffer more infections than sedentary. The epizootic in migratory water birds greatly depend on vulnerability of the birds, vectors, parasite loads and climatic factors such as temperature and humidity. The recent worldwide bird flu outbreaks due to H5N1 avian influenza virus which were practically distributed by migratory birds, were reported in Asia and afterwards spread to Russia, Middle East, Europe and Africa. These species have also transmitted Newcastle disease virus, avian pneumovirus, duck plague virus, West Nile virus, equine encephalitis virus and enteropathogens. In Awba dam and International Institute of Tropical Agriculture (IITA) in Ibadan, blood and faecal samples, and ectoparasites were collected from a total of 123 captured wild birds. Direct smear and floatation method were used for blood and faecal analysis respectively. Ectoparasites collection were based on dust-ruffling technique method and identified under light microscope. Plasmodium parasites were isolated from five resident bird species and Ixodes species were found in three birds. Resident water birds in Nigeria are at high risk of contracting deadly diseases of many kinds from the migratory water birds which could also affect other vertebrates as well as human beings. To control and circumvent parasites of zoonotic and public health importance, strict biosafety and biosecurity, and constant surveillance of the wetlands which are used by the migratory water birds for feeding and roosting should be employed as tracking strategies of the epidemiology.

Keywords: Migratory water birds, Ectoparasites, Biosafety, Biosecurity,



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ABST-NIC-19-025

Biosecurity for National Development: Heavy Metals Concentration in Underground Water and Its Environmental Health Effects: A Case Study of Solous Dumpsite Igando, Lagos

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The proportion of metallic wastes and electronic wastes dumped in the dumpsite contribute to significant amount of heavy metals in landfill these heavy metals do find their ways into the underground water around the dumpsite which subsequently lead to contamination which generate adverse effect on the health of the humans that consume such water. The aim of this study is to assess heavy metals concentrations in groundwater used by respondents around Solous dumpsite in Igando Lagos State, Nigeria and their perception on the ill effect of the contaminated water on humans. Water samples were taken from 12 different locations which were within a distances range of 0.07-0.72km from the dumpsite. Structured questionnaire to determine the perception of the residents around the dumpsite about ill health effect of heavy metals contaminated water on humans, were administered to 10 users of each water sources making a total of 120 respondents. Physico-chemical parameters pH, color, electricity conductivity, nitrates, phosphate, water hardness was analyzed. The heavy metals (Lead (Pb), Cadmium (Cd), Iron (Fe), Nickel (Ni), Zinc (Zn) and Manganese (Mn) concentrations of the water samples from the 12 sites were investigated using Atomic Absorption Spectrophotometer (AAS). The questionnaire revealed that age, educational qualification and year of living in the community of the respondents explain a significant amount of the variance in the value of the perception of the respondents on effect of heavy metal contamination $F(3, 116) = 5.175$ at $p = 0.002$, $R^2 = 0.118$, $R^2_{\text{Adjusted}} = 0.095$).

The water samples from the 12 sites have pH range of 6.15 ± 0.08 - 8.55 ± 0.00 , Electricity conductivity range of 83.1 - $6570 \mu\text{S}/\text{cm}$, total hardness range of 17.8 - 780ppm , Nitrate range of 1.0 - $40 \text{mg}/\text{L}$, Phosphate 1 - $2 \text{mg}/\text{L}$ and heavy metals concentrations ranges thus: Pb (0.08 - $1.20 \text{mg}/\text{L}$), Cd (0.03 - $0.08 \text{mg}/\text{L}$), Fe (1.4 - $12.3 \text{mg}/\text{L}$), Ni (0.08 - $0.19 \text{mg}/\text{L}$), Zn (0.05 - $0.13 \text{mg}/\text{L}$) and Mn (0.01 - $0.04 \text{mg}/\text{L}$). The Pb, Cd, Fe and Ni concentrations were above the permissible limits specified by World Health Organization (WHO) and Standard Organization of Nigeria (SON) for drinking water. The relationship between distances from dumpsites, depth of the underground water sources and heavy water contamination of the water source had a final predictive model which was: Heavy Metal contamination = $8.184 + (-6.312 * \text{Distance from the landfill (km)}) + (-0.006 * \text{Depth of the underground water source})$. Over 75% of the respondents were not sure of any prior ailment linked to any heavy metal contamination affecting anyone among them. In conclusion, all water samples collected were contaminated by heavy metals although with varying amount and of which the respondents using this water are ignorant of the danger attached to it. It is recommended that more awareness attached to heavy metal toxicity should be created by the ministry of environment.

Keywords: Heavy metals, leachate, landfill, toxicity, environment



ABST-NIC-19-026

Knowledge, Attitude and Practices in the Prevention/Control of Tuberculosis Among People in Ojo Lga, Lagos

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Among infectious diseases affecting humans, tuberculosis (TB) is one of the most severe, killing 2 million people worldwide every year. Mycobacterium tuberculosis is essentially an airborne pathogen included in Risk Group 3 according to the international classification. It is transmitted via aerosols or less frequently by accidental inoculation. This study aims at evaluating the knowledge, attitude and practices of tuberculosis and its prevention amongst people of Ojo, LGA of Lagos state a local government hosting the state university. Wellstructured 17 items questionnaire was distributed randomly among 150 respondents living in the local government. 51.3% of the respondents claimed to get information about tuberculosis from health professionals while 23% of the respondents got information that they know about tuberculosis from family/friends. The other sources of information were between 13-16% among the respondents. 72% of the respondents were not sure BCG vaccine can serve as preventive measure to TB disease. 55% of the respondents agreed that Irregular taking of TB drugs during course of treatment would lead to drug resistance. 33% of the respondents strongly agreed that previous contact history of exposure to TB patients could facilitate TB spread. 70% of the respondents agreed that turning away from other person when coughing and sneezing reduce TB contact. The correlation between the attitude and practices of the respondents was significant at $R=0.263$, $P=0.001$. This study shows that the impact of the university in the environment influenced the awareness about tuberculosis among the respondents

Keyword: Tuberculosis, Mycobacterium, practices, Knowledge, environment



ABST-NIC-19-027

Current status and Burden of Malaria in pregnancy among Women in some selected internally displaced Persons camps in Maiduguri, Borno State.

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Malaria is a major cause of morbidity and mortality among displaced populations in sub-Saharan Africa, accounting for an estimated 30 million women living in malaria endemic area become pregnant each year. Recent literature indicates that over 140 million people in Nigeria with 97% of the population are at risk from malaria infection. To assess the current status and burden of malaria in pregnancy among women in IDPs camps in Maiduguri, a cross sectional study on the relationship between pregnancy and malaria parasitaemia was conducted among pregnant IDPs women in Maiduguri. Of the 100 pregnant women enrolled in the study and screened for malaria infection, 40 (40%) were examined in Dalori camp, 37 (37%) were examined in Bakasi and 23 (23%) were examined in Aji ganaram camp. The prevalence of malaria infection among pregnant women based on different IDPs camps reveals that, 42(42.0%) out of the 100 pregnant women examined in all the three camps were infected with malaria parasitaemia. In Dalori camp 19(47.5%) out of 40 women examined were infected, while in Aji ganaram camp 16(43.2%) out of 37 women examined were infected, likewise in Bakasi 7(30.4%) out of 23 women examined were infected respectively. There is no statistically significant difference between camps and malaria infection ($p>0.5$). Similarly, the prevalence of malaria infection based on age group. Of the sample examined 68 (68%) out of the 100 women examined were infected with malaria parasitaemia, the age group of <15 years had the lowest malaria infection rate with 2 (2.0%) and there was significantly higher prevalence rate of malaria infection recorded in age group of 15-45 years old women with 66(66.0%). %. However, prevalence of malaria parasitaemia based on marital status in study population reveals that 51(51.0%) out of 100 women examined were infected with malaria infection. There was significantly higher prevalence among widows with 29(54.7%), followed by 18 (48.6), and followed by 4(40.0%) in single (not married women) respectively. Chi-square analysis shows significant difference between widows, married, single and infection rate ($p>0.05$). The study showed a strong correlation between age, marital status and malaria infection among pregnant women in IDPs camps. The morbidity and mortality burden of malaria in the study population among pregnant women in internally displaced persons camps could be reduced drastically by proper prevention strategies, good dietary feeding, good shelter and improving diagnosis.

Key words: pregnancy, malaria, IDPs camps, current status, burden, women, some selected.



ABST-NIC-19-028

Uganda's Achievements and Strategies for Improving Biosafety Biosecurity Systems

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Since 2010, the Ministry of Health-Uganda and development Partners have implemented a strategic Biorisk management (BRM) program with achievements in the harmonization of BRM training and Audit curricula across multisectoral arena. Other efforts have been locally certified pool of trainers, Auditors and Biosafety Cabinet certifiers, infrastructural refurbishment, safety equipment and appropriate packaging and shipment of infectious materials. Recent report on the outbreak of VHF in Uganda and neighboring countries appears to be a continuing concern about the health and safety of health workers, community and the environment. Hence, Uganda's Ministry of Health has developed strategies for improving Biosafety and Biosecurity practices in the health facilities. The pre-tested electronic standardized quantitative score based checklist electronic audit checklist composed of 18 essential sections covering biosafety biosecurity practices was used in a cross-sectional manner to collected data for the 2017 and 2018 Audits. The selection of laboratories for the audit was across all laboratory tiers with TB gene Xpert sites prioritized; National referral Hospitals, Regional Referral Hospitals, District Hospitals and HC IVs. The Annual Laboratory Biorisk management assessment average performance of all the 18 technical elements of the national Laboratory assessment checklist. The BRM performance improvement varied with level of service delivery and was registered higher at Regional referral laboratories 72% (n=12) from 53%, followed by HCIII 35%(n=35) from 24%(n=73), General Hospital Laboratories 52%(n=66) from 43%(n=54) and HCIV41%(n=116) from 33%(n=69) in 2017 respectively (Table1). Comparison of 125 laboratories that were both audited in 2018 and 2017 indicated an overall significant average BRM performance improvement of 12.39 [9.73 - 15.07, $p < 0.001$]. Specifically, Regional Referral Hospital Laboratories had a significant average improvement of 19% [2.46 - 35.8, $p = 0.028$], General Hospital Laboratories at 11.08%[6.76-15.41], Health Center IV Laboratories at 11.68%[7.59-15.77] and Health Centre III Laboratories at 15.31%[8.03-22.58] at $p < 0.001$ between 2017 and 2018 audited years. Additionally, of 248 audited facilities, 87 were Hubs while 161 non Hubs. There was an increase in BRM performance for hub facilities to 59% from 34% in 2017. Likewise, Government and Privately owned laboratories improved to 45%(n=198) and 43%(n=50) in 2018 from 34%(n=180) and 33%(n=30) in 2017 respectively. The "new facilities" (n=123) audited only in 2018 had an average BRM performance of 38%. Generally, there was a remarkable BRM performance improvement across all laboratories tiers. We registered an overall national BRM performance improvement of 45 % (n=248) in 2018 from previous 33% (n=210) in 2017. The Biosafety Biosecurity practices in Ugandan Health facilities have progressively improved through strategic trainings, quarterly mentorships as measured by the national BRM Annual Audit results of 2017 and 2018. Continued efforts and global collaborations will certainly entrench Biosafety Biosecurity practice sustainability in Uganda.



ABST-NIC-19-029

Promotion of Biosafety Practices Using Illustrative Posters at University of Maiduguri

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We postulated that clear safety posters displayed in strategic areas in laboratories could enhance change in safety practices such as proper use of Personal Protective Equipment (PPE), handwashing and glove removal. Three (3) posters were designed with pictorial illustrations of; proper use of PPE over locally worn attire and shoes, a clear step by step glove removal procedure and a third poster illustrating steps in proper handwashing after glove removal. A survey on awareness and knowledge on these procedures was carried out before and after the poster display across twenty-one (21) biological laboratories, which were clustered into three groups of seven (7). Each group was given a single type of poster at the pre-survey and the remaining posters at the post-survey after three months. The surveys were Likert-scale survey of 15 questions, where 86 of 109 pre surveys were received and 74 out of 100 post-poster surveys were received. The response rates were 82.2% and 74% for pre- and post- poster survey respectively. Responses were compared before and after the poster display and the pre and post surveys showed increased awareness in knowledge and practices relating to PPE usage, handwashing attitudes, and glove removal procedures. Control groups who were not given a specific poster either maintained or declined in their attitude to the other safety procedures indicating that posters could significantly improve compliance to safety activities to laboratory personnel, students and researchers. We recommend that clear posters should complement safety SOPs in the laboratories and could be a valuable means of promoting adherence to safety practices

Keywords: Handwashing, Laboratories, Safety, Survey



ABST-NIC-19-030

Implementing Laboratory Biosafety Procedures as a Means of Reducing Occupational Hazards and Improving Staff Biosecurity

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Medical Laboratory workers are usually faced with numerous occupational hazards that may severely jeopardise their health and safety. Laboratory biosafety is the containment principles, technologies and practices that are implemented to prevent unintentional exposure to or accidental release of infectious agents and their toxins. It is therefore essential that biosafety measures be used at all times in order to reduce the risk of exposure to laboratory acquired infections on the part of workers. The knowledge and application of these biosafety principles ensure safety of the laboratory staff and environment from potentially infectious pathogens. The aim of this study is to assess the implementation of the biosafety procedures used in Infectious Diseases Hospital, Kano and its impact on reducing biosafety risks. The laboratory safety audits records of IDH, Kano, from 2011-2017 were retrospectively assessed to determine the level of implementing biosafety procedures with respect to use and availability of personal protective equipment, staff training, electricity safety, and fire safety. Personal protective equipment such as hand gloves, laboratory coats were adequately available and routinely worn in the facility. However, eye shields, eye goggle and boots though available, they were rarely worn by the staff during the same period. Other safety equipment such as eye wash kit, spill kit and first aid kit were either not available or expired for most years until 2014 when they were purchased and put into use. The audit records also showed that most of the staff did not receive training on biosafety procedures from 2011-2014. Only 21.4% of occupational injuries were recorded after the staff received training on biosafety procedures. No electrical or fire incidences were recorded throughout the time covered by the audit. The goal of biorisk assessment such as laboratory audits is to develop a comprehensive laboratory biosafety and biosecurity culture. This allows biosafety procedures to be imbibed in the routine laboratory activities, thereby improving the overall working conditions and good laboratory management.

Key words: Biosafety, Laboratory, Staff, Procedures, Kano,



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ABST-NIC-19-031

The assessment of risk associated with waste generated in general hospital, Sabon-tasha, Kaduna state. Nigeria.

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When Hospital wastes are mismanaged, they can cause severe health hazards to the staff, patients, patient's relatives, visitors and the community. The main aim of the Project is to establish and maintain a Risk Assessment system for Waste Management through advocacy meetings with the management and stakeholders, conducting a baseline assessment using the standard Waste Management Inspection Checklist, conducting gap analysis and pointing out the non-conformities to the management, conducting a reassessment to know whether the non-conformities have been addressed and to implement mitigation strategies in order to curb the health hazards. The project was carried out from February to June, 2019. The checklist used for the assessments consist of 18 comprehensive questions on waste management according to CWA15793-2011 (European commission for standardization, 2011). The assessments were carried out with the assistance of all the stakeholders. All the units in the facility (Laboratory, theater, male ward, female ward, paediatric, OPD, family planning, ANC, Maternity, PMPTC, DOT unit, Dental and Youth friendly) were assessed. The report was presented to the management and a period of 6 weeks was given for the non-conformities to be addressed before a reassessment was done. Some mitigation measures were applied. During the Baseline assessment, the hospital scored 17% on waste management practices while after mitigation a 44% score was recorded. It implies that an improvement rate of 27% was observed. This shows that some of the health care workers have improved on the way they handle waste. But from the final score which is less than 50%, it means that the hospital Staff, Patients, visitors and the surrounding communities are at a High Risk for diseases, hospital acquired infections, injuries and death. Therefore, a lot of work has to be done concerning waste management.

Keywords: Waste management, Risk assessment, Hospital, Disease, Mitigation



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ABST-NIC-19-032

Location from crude oil well exploration as it impacts on *Manihot esculenta* Crantz and quality of surrounding surface water bodies.

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The discovery and subsequent exploration/exploitation/extraction of crude oil has impacted heavily on the Nigerian economy. Its positive effects are felt on the economy, while the same cannot be said of the environment, particularly of locations close to the well. This study assessed the impact consequent upon the presence of an oil well on *Manihot esculenta* and quality of surface water in Aguleri, South Eastern Nigeria. Cassava tuber and surface water samples were collected at different locations close to the oil well. The proximate analysis of the cassava tubers, physicochemical and heavy metals analysis of water samples were done using standard methods. The cassava proximate analysis results; moisture content (5.25), carbohydrate (71.38%), crude protein (9.10%), crude fibre (5.20%), ash content (4.01%) and crude fat (1.56%). The concentrations of copper (13.8 mg/kg, WHO, 73.30mg/kg), Nickel (3.2 mg/kg, WHO, 67.9mg/kg), cadmium (0.2mg/kg WHO, 0.2mg/kg), were all within permissible levels in the *Manihot esculenta*, while iron (158.5mg/kg, WHO 50mg/kg), manganese (7.0mg/kg, WHO 2mg/kg), chromium (6.1 mg/kg, WHO 0.05mg/kg), cobalt (2.5 mg/kg, WHO 0.1mg/kg) and lead (1.8 mg/kg WHO 0.3mg/kg) concentrations were observed to be higher than the WHO allowable levels. All the parameters analyzed in water samples viz (pH, 7.05; WHO, 6.5-8.5) (conductivity, 62.30 μ S/cm, WHO 500 μ S/cm) (turbidity, 3.3 NTU, WHO <5) (total dissolved solids 31.50 mg/l WHO, 500mg/l), (total suspended solids, 100mg/l, WHO 500mg/l) and (nitrate, 0.5 mg/l, WHO 50mg/l) were within WHO allowable limits. Iron, chromium, nickel and lead (two sampling points) concentrations in water sampled were higher than minimum allowable limits. Manganese and cobalt concentrations in water sample were within allowable limits. The ash values of cassava analyzed was high, suggestive of high metal content. The present study showed both water and cassava samples as having high concentrations of heavy metals, most probably a result of contamination from crude oil exploration and/or oil spillage in the study area. The study therefore recommends portable water for communities adjacent /close to oil well for domestic use and irrigation. Furthermore, farming activities should be carried out in areas far removed (>19.4km) from the oil well to mitigate on the levels of heavy metals in surface waters and farm produce.

Keywords: Oil well, water, *Manihot esculenta*, proximate analysis, heavy metals.



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ABST-NIC-19-033

Total DNA and Secondary metabolites response to abiotic stress (Pb^{2+}) in *Vernonia amygdalina*

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Vernonia amygdalina (bitter leaf) is a commonly consumed vegetable all over the Nigeria nation. It grows wild and is consumed as both a vegetable and potherb. Due to its hardy nature, usage (in ethnomedicine) and associated anthropogenic activities, the plant grows and is harvested mostly from soils contaminated with potentially toxic metals like lead. This study explores the total DNA and secondary metabolite responses of *Vernonia amygdalina* grown under abiotic stress (Pb^{2+} contamination) conditions. The study employed a model of spiking soil with known concentrations of Pb^{2+} (400 – 2000ppm) and growing the cuttings of *Vernonia amygdalina* in the Pb^{2+} spiked soil groups for 41 days. Uptake of Pb^{2+} was monitored in the leaf and stem of the plant using AAS. Secondary metabolites were monitored using GC-MS, while the total plant DNA was also monitored. Uptake of the lead from the soil by the leaves and plant of *Vernonia amygdalina* was concentration and time dependent over the duration of the study. There was no DNA fragmentation observed in both leaves and stem across the various Pb^{2+} concentration groups. Levomenthol was the only secondary metabolite commonly expressed in plants cultivated across the various Pb^{2+} concentration groups. Varying classes of secondary metabolites were expressed across the Pb^{2+} concentration groups. Cultivation of *Vernonia amygdalina* in Pb^{2+} contaminated soil may affect the potency of the plant when used in ethnomedicine consequent upon the different secondary metabolites expressed.

Keywords: *Vernonia amygdalina*, AAS, GCMS, lead DNA

ABST-NIC-19-012**Prevalent Hepatitis B Virus Genotypes Circulating among HIV Co-Infected Patients in an Urban City, South-South Nigeria**Ayodele, Martins B.O., ^{1*} Ogugbue, C. J., ² Frank-Peterside, N. ² and Tاتفeng, Y.M. ³

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Hepatitis B Virus (HBV) has been classified into genotypes A-J which characteristically has different geographic origins, disease progression and responses to antiviral treatment. Co-infection caused by Human immunodeficiency virus (HIV) and HBV is common because they both share similar routes of transmission. In this study, we report the prevalent HBV genotypes circulating among HBV-HIV co-infected individual in Port Harcourt, south-south Nigeria. DNA was extracted from stored serum samples obtained from 25 HBV-HIV co-infected patients selected out of 535 HIV I/II sero-positive individuals confirmed to be HBsAg positive from University of Port Harcourt Teaching Hospital (UPTH) and Obio Cottage Hospital both in Port Harcourt City. HBV genotyping was carried out using a nested Polymerase Chain Reaction (PCR) approach followed by Big-dye termination sequencing. Of the 25 samples, 15 (60.0%) were successfully genotyped. HBV genotype E was found in 10 (66.7%) of samples whereas, B was found in 5 (33.3%) participants. The mega blast search in the National Centre for Biotechnology Information (NCBI) database, revealed a close relatedness to HBV genotype B and E. HBV genotypes B and E were found among HIV co-infected patients though genotype E was more predominant in this study. Early detection and identification of HBV genotype particularly in HIV co-infected individuals could reduce the rate of liver degeneration and enhanced treatment.

Keywords: HBV-HIV; Genotypes; Co-infection



ABST-NIC-19-034

**ESTABLISHMENT OF SCHEDULED MONITORING OF CCTV CAMERAS IN DEFENCE REFERENCE
LABORATORY ABUJA**

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Closed circuit television (CCTV) entails capturing signals which are monitored for surveillance and security purposes. The Defence Reference Laboratory is 5 star laboratory accredited by American Association for Laboratory Accreditation, A2LA for ISO 15189 in clinical testing. Standard procedures for safety need to be monitored as biological specimen are analyzed for patient monitoring or stored for research. The security measures also need to be optimal to prevent risk of outbreaks. The intent of this work is to establish and maintain a scheduled routine to effectively monitor biosafety and biosecurity compliance through the CCTV. This is to ensure policy standards are maintained and areas for improvement identified in line with bio risk management. It is proposed that appropriate recommendations from this work will promote the use of CCTV in laboratory facilities.



ABST-NIC-19-035

Road map to Laboratory Accreditation A case study of the Defence Reference Laboratory Abuja: The Biosafety perspective

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Laboratory Accreditation is a required standard for validation and verification of processes and procedures deployed in a clinical laboratory for quality, safety of workers and the workplace users. Quality in clinical testing is priceless, as it brings to the fore expertise in the field, where standards are met and accurate diagnosis are provided. The Defence Reference Laboratory Abuja is a research Laboratory, the product of a dynamic partnership between the Nigeria Ministry of Defence, Health Implementation Program and the United States Department of Defence Walter Reid Program in Nigeria. Supported by USAMRD –A/N the Laboratory in September 2018 became an internationally recognized clinical laboratory, the first in West Africa to be accredited by the American Association for Laboratory Accreditation (A2LA). The quality policy of the laboratory drive its commitment to providing medical laboratory testing services of high international standards, provision of accurate, reliable results which are credible and timely obtained from validated and verified methods fit for its intended use. The scope of functions range from sample reception, processing of PBMCs, a biorepository for sample storage, with viral load, EID testing Serology, EIA , hematological indices and chemical analysis for routine diagnostic and research purposes. The laboratory has a staff strength of over a hundred, also has enrollment of these investigations in external quality assessment for proficiency testing. Over the years the laboratory has transitioned through various levels of achievements attributable to its technical competence in clinical testing, focused operational scope efficient quality management system. These interwoven scenario insures the health of staff, safe work environment and access control all of which interplay to ensure biosafety of the workplace abd biosecurity of the pathogens. The outcome of observed improved in equipment, skilled manpower increase and training exposure of personnel recorded in this facility underscores the fact that biosafety cannot be ignored if the process of laboratory accreditation would be achieved in any laboratory setting.



ABST-NIC-19-036

BIORISK ASSESSMENT OF THE TEACHING/RESEARCH AND VIROLOGY LABORATORIES OF THE UNIVERSITY OF NIGERIA ENUGU CAMPUS, ENUGU, NIGERIA

Nnabuchi Chimaobi I¹, and Puja-Benjamin Chioma²

¹Teaching/Research Laboratory Unit, Medicine, University of Nigeria, Enugu Campus, Enugu, Nigeria. ²Virology Laboratory, University of Nigeria Teaching Hospital

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Survey among researchers, students and laboratory workers who are exposed to risks in the Teaching/Research and Virology laboratories was done by using a detailed questionnaire which was completed independently by researchers, students and members of staff of the aforementioned Laboratories. A detailed checklist was also used during the assessment. Result showed that gaps exist in the safety knowledge and practices of researchers, students and laboratory workers. Equipment and the use of chemicals in biological assays pose the highest risk. The research recommends that: A policy on biorisk management be formulated and be integrated in the overall safety guidelines of the university.



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Nigerian Biological Safety Association (NiBSA)

2nd Annual International Biological Safety Conference, ICC Abuja, November 18 –23, 2019.

Uganda's Achievements and Strategies for Improving Biosafety Biosecurity Systems

Diana Atwijuka

Uganda National Health Laboratory Services (UNHLS) - Ministry of Health Uganda

Background

- Uganda is one of the Phase one prioritized countries by Global Health Security Agenda(GSHA) in which Biosafety and Biosecurity is the 3rd action package of the GSHA.
- Since 2010, the Ministry of Health- Uganda /UNHLS in collaboration with relevant government sectors and development partners have implemented a strategic Biorisk management(BRM) roadmap ; BRM policy, national harmonized BRM training curriculum, capacity building, locally certified pool of trainers & Auditors, local certification of Biosafety cabinets, mentorships and Audits to strengthen the program.

Why scale up BRM in Uganda

- Recurrent outbreaks in the country-In 2019 alone, Uganda has experienced several outbreaks including; Crimean-Congo Hemorrhagic Fever (CCHF), 2 in 2017, 6 in 2018, 5 in 2019; Rift Valley Fever (RVF) 4 in 2017, 13 in 2018, 2 in 2019; Anthrax 2 in 2017, 3 in 2018, 3 in 2019; Notably are the outbreaks of Ebola Virus Disease (EVD) (7 outbreaks since 2000) and Marburg (4 outbreaks since 2007)
- Increasing lab strengthening and manipulations – Microbiology labs, research labs, BSL3 labs
- Weak Biosecurity systems in the region among others

Key Achievements by the BRM Program

Documentation.

- Developed a harmonized one health National BRM training curriculum - 3 tiers (Basic Track for the support staff, Technical Track for Laboratory professionals and Leadership Track for Managers.)
- Developed National Biosafety Biosecurity policy and guidelines 2015.
- A quantifiable standardized National BRM Audit checklist

Key Achievements continued

Human Resource Capacity

- **100 Trainers of Trainers- locally certified professionals**
- **20 Internationally certified professionals by IFBA**
- **Over 30 locally certified BRM Auditors-M&E group**
- **Annual lab officers training~ 2000 lab workers**
- **Trained over 200 health managers**
- **Trained over 500 non technical (Basic course) - cleaners, sample drivers**



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PRESENTERS ABRIDGED PROFILES

RAPHAEL TEME

ABST-NIC-19-002



Raphael Teme is a Seasoned Clinical/ Biomedical Scientist and a doctoral researcher at the NnamdiAzikiwe University, Awka.

Mr Raphael Teme is a recipient of several awards including: RSSDA's Post Graduate Foreign Scholarship award in 2013. Raphael broke national training record in 2015 when he emerged the best trainee in the “Foundations in Laboratory Leadership and Management” course jointly organised by the APHL and ASM in conjunction with AMLSN. He holds an MSc in Medical Diagnostics from the prestigious Cranfield University, United Kingdom.

Raphael is published in international peer reviewed journals and local conferences. He is a Member of various professional bodies including IBMS, AMLSCN, and ASM. Raphael is gracefully married with children.

ABST-NIC-19-004

DR. BABATUNDE SAMSON ASENUGA, B.Tech., M.Sc., P.h.D., MNiBSA, FNCF, FSEA



Dr. Babatunde S. Asenuga has over twelve (12) years extensive experience in strategic Project Management, Technology Management, Healthcare Innovation, Biosafety, Biorisk Management, Educational Administration, Technical Entrepreneurship, Project Development and Community Service focused on Peace Advocacy in Nigeria. He has served as a Consultant in various capacities to different individuals and institutions. Asenuga possesses a B.Tech University degree in (Project) Management Technology from Lagos State University, a Diploma in Computer Engineering, a Certificate in Data

Processing, an Advanced Certificate in Biorisk Management as well as a 35 contact hour's certificate in Project Management. He also possesses M.Sc. Technology Management and a PhD Technology Management from Obafemi Awolowo University (OAU), Ile-Ife, Nigeria. Asenuga has 6 published articles in learned academic journals and 8 accepted articles to be published in renowned learned journals. He has traveled periodically to many African countries and he is also a member of Nigeria Biological Safety Association (NiBSA) along with numerous professional bodies. He is a Trustee of AriseONigeria Empowerment Initiative and the founder of Peace Advocators Network. Asenuga lectures at Wesley University, Ondo, and was the immediate past coordinating Head of Management Sciences department in the University. He coordinated as Chairman, Local Organizing Committee of the first International Conference and Workshop On Innovation, E-Schooling, Entrepreneurship and Grantsmanship held at Wesley University, Ondo, Nigeria in conjunction with Adeyemi College of Education, Ondo, University of Medical Sciences, Ondo and Southern University, USA. He is currently advocating Biosafety and facilitating free international certification on project management to Nigeria universities.

ABST-NIC-19-005

IBRAHIM MUHAMMAD:



Ibrahim Muhammad: I was born and raised in Maiduguri, the capital of Borno state, Nigeria. I received my B.Sc. degree in Zoology at the University of Maiduguri, in 2007. I did the one year mandatory national service at Adamawa State which I completed in 2008. In April, 2012 I appointment as Assistant Lecturer which stated at Science Laboratory Technology Department, Ramat Polytechnic Maiduguri. In 2015, I received Tetfund Scholarships and studied M.Sc. Biotechnology at Sharda University, Uttar Pradesh India. Prior to that, I received a Postgraduate Diploma in Education (PGDE) in 2015 at Sir Kashim College of Education, Maiduguri, Borno State.

My primary research interest focuses on Microbiology and Biotechnology, Currently, my research project is on Malaria Parasite and bioremediation of oil-polluted environment.

I involved in student final year research project supervision and I have a number of publications. I am currently the seminar coordinator in my department.

I hold a membership of Nigeria Biological Safety Association and the Nigerian Society for Microbiology.



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ABST-NIC-19-006



MRS ANYAEGBU NNEKA PATRICIA.

I am Mrs Nneka Anyaegbu Patricia. I am married to Mr Chris Kokelu from Nimo, Anambra State. I am a qualified medical laboratory scientist by profession. I have been practicing for 15 years in different health facilities. Due to the passion I have for safety as one of the essentials of Quality Management System (QMS) in Biomedical Laboratory Science I was appointed to the post of Laboratory Safety Officer of Gombe State Specialist Hospital,

Gombe.

I registered and joined NiBSA organization in 2016 due to the passion I have for Biosafety and Biosecurity in research facilities and environment. I have undergone the following training from NiBSA:

1. Introduction to Biorisk Management Training
2. Advanced Biorisk Management Training
3. Consolidated Biorisk Management Training
4. Stakeholders Meetings
5. Project Management Base Training
6. Trainers of Trainees

It was after equipping myself with these training that I decided to go into research on **AWARENESS AND PRACTICE OF BIORISK MANAGEMENT PRACTICES IN GOMBE STATE SPECIALIST HOSPITAL**. I discovered the course of my work that health-care providers need to be sensitized about the risk associated by working with biological agents that are being generated from their facilities. I have done a lot of presentations in order to create the awareness in Gombe State Specialist Hospital where I work. If I get support from international donor or government of the nation, I would like to carry out similar researches on Biorisk management system beyond Gombe State.

ABST-NIC-19-007



GALADIMA ADAMU DAGONA, NCE, BSc, MSc.

GALADIMA Adamu obtained NCE, BSc. Zoology from College of Education Gashua, and University of Maiduguri in the year 2002 and 2007 respectively. Dagona secured employment as graduate assistant in the Biological Science Department at newly established University in Yobe State. He acted as the mentor for remedial and IJMB trainee for science student in Biology for placement into various programs of the University. Whilst working as a Graduate assistant, Dagona earned a Master degree

(MSc) in Medical Microbiology from prestigious University ABU Zaria in (2012). Dagona resumed back to work in Yobe State University to continue with teaching and research activities. While in Yobe state University he was appointed to as serves various levels and rose to rank of lecturer II.

Mr Dagona moves to Federal University Gashua, where he assumed duty as lecturer II in November, 2015. Increasingly Mr Dagona has held Several Committees Membership, Research and publication, GST Board of examiner and Management roles appointed as Ag Head of Department, Biological Science from 2016-todate. Whilst heading the department Dagona was the NSM (Nigeria Society for Microbiology, Member, a member National Research and Development Institute Dagona aspire to be expert in areas of interest is Medical Microbiology which spans an areas of Molecular microbiology, Bacterial transformation and diagnostic techniques/ functional genomics, proteomics and antimicrobial studies of bacterial infectious diseases. Focuses specifically on gastrointestinal bacterial organism e.g C. jejenum, Helicobacter pylori. Attended local and international conference, workshops, seminar, and published papers in high impact journal local and international Scopus indexed. Borno college of Agriculture, Maiduguri

Published 35 research articles in several national and international journals of repute.

Attended over 30 national and international conferences, workshops, symposium, short and long term training on molecular biology, biotechnology, biosafety, biosecurity, biorisk management, scientific equipment repair and troubleshooting in USA and United kingdom.



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ABST-NIC-19-008



JUMMAI THERESA KALDAPA

Jummai Theresa Kaldapa is a laboratory Scientist in Biotechnology Centre at the University of Maiduguri. She is a fellow of the Nigeria Medical Laboratory Science, a member of the Biotechnology Society of Nigeria, a member of the Nigeria Institute of Science Laboratory Technology, a member of the Nigeria Biological Safety Association.

A graduate of Biochemistry with over 10 years working experience in clinical laboratory, she presently heads the Plant Tissue Culture Laboratory in the Biotechnology Centre. She is currently pursuing an MSc programme in Biological Sciences (Plant Physiology and Anatomy) at the University of Maiduguri.

ABST-NIC-19-009



MUHAMMAD ASKIRAMA ABDULLAHI

"Muhammad Askirama Abdullahi was born on 12th February 1984. A graduate of Vet Medicine from University of Maiduguri 2011, MSc Public Health and epidemiology 2019. Works with Nigerian Institute for Trypanosomiasis Research since November 2013 to date."

ABST-NIC-19-010



OLORI OKE OLUSOLAPE

My name is Olori Oke Olusolape; I lecture biological sciences in Pest Management Technology Department of Federal College of Forestry Jos, Plateau State Nigeria. Some of the courses I have taught and teach till date include Rodents and control, Epidemiology and Plant Pathology. I also supervise graduating student's projects and conduct relevant practicals.

I have a B.Sc. In Zoology and an M.Sc. In Applied Entomology and Parasitology from University of Jos, I am a registered member of NiBSA and Entomological Society of Nigeria

My area of interest in Research is Agricultural Entomology, Vector, Pest and Parasite Control especially those of health hazards to plants and humans.

I love reading, traveling and cooking.

ABST-NIC-19-011



ALIABBAGANABENISHEIKH

I am a certified Laboratory technologist/research fellow/scientists with Biosecurity, Biosafety and biorisk management experience, where my professional education, experience and ability will allow me to make an immediate mitigation measures in an biorisk scenario.

Education

Ph.D Parasitology (in view) -2017-up to date
University of Maiduguri

Msc Applied Microbiology and Biotechnology 2015-2016
University of Wolverhampton

PGD Microbiology and Parasitology 2006-2014
University of Maiduguri

HND in Microbiology and Virology (SLT)- 2002-2005

University of Maiduguri & Nigeria institute science laboratory technologists Ibadan

ND in Agricultural Technology 1994-1998



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ABST-NIC-19-012



AYODELE, MARTINS BAMIDELE OLUSEUN

PGD. (UPH), M.Sc. (RSU), Ph.D. (UPH), AMLSCN.

PERSONAL DATA

Date of Birth: 8th April, 1971
Sex: Male
Marital Status: Married, with three children.
State of Origin: Ogun
Mobile Phone Nos: 0803-7055-953, 0809-9601-526.
Number & age of Children: Three aged 13, 11, and 1 years.

EDUCATIONAL QUALIFICATIONS AND INSTITUTIONS WITH DATES

1. Ph. D. (Medical Microbiology, 2018) - University of Port-Harcourt, Port-Harcourt.
 2. M.Sc. (Medical Laboratory Science, 2006) - Rivers State University, Port Harcourt.
 3. AIBMS (Biomedical Science, 2005) - Institute of Biomedical Science, London
 4. PGD (Microbiology, 2002) - University of Port-Harcourt, Port-Harcourt.
 5. AMLSCN (Medical Microbiology, 1996) - Obafemi Awolowo University Teaching Hospital, Ile-Ife.
- professional degree of Medical Laboratory Science Council of Nigeria.

WORK EXPERIENCE AND DATES

1. Chief Medical Laboratory Scientist/Instructor, University of Port Harcourt, Dept of Medical Microbiology & Parasitology, 1999 till date.
2. Locum Medical Laboratory Scientist (Microbiologist), RNZ Occupational Hospital (Formerly Shell Petroleum Development Hospitals, (Laboratories) , Shell Industrial Area, Port Harcourt, 2010 till date (Only on vacations).

ABST-NIC-19-013



BEN-CHIOMA, ADLINE ERINMA, PhD, LSM

Married to Hon. (Barr.) G.N. Chioma, KSM

FORMAL EDUCATION:

- 1994-2000 – B.MLS (CHEMICAL PATHOLOGY)** – Rivers State University of Science and Technology, Port Harcourt, Rivers State.
- 2012 – M.Sc (Chemical Pathology)** – Rivers State University of Science and Technology, Port Harcourt, Rivers State.
- 2018 – Certificate (Introduction to Epidemiology for Global Health)** – University of Washington (Online)
- 2018 – PhD (Chemical Pathology)** – Rivers State University, Port Harcourt
- 2019 – Certificate (Online)** – Research Writing in the Sciences - INASP
- 2019 – Certificate (Online)** – MOOC in Implementation Research – TDR (In View).
- 2019 – MPH (Online)** – University of South Wales (In View).

Research Interest: Non Communicable diseases, emerging and re emerging communicable diseases, Biorisk Management and genetic profiling for diseases.

Work Experience: 2013 – Date. Lecturer, Rivers State University, Port Harcourt

2006 – 2013 – Assistant Chief Medical Laboratory Scientist, Rivers State Hospitals Management Board.

Recent Conference attended

1. Abstract Presentation ‘**Evaluation of Heavy Metals and antioxidants in the body fluids of breast cancer subjects in Port Harcourt**’ at the maiden conference of Nigeria Biological Safety Association, Abuja, 27 – 31 August, 2018.
2. NCDC Maiden Lassa Fever International Conference, Transcorp Hilton Abuja, 16 – 17 January, 2019.

MEMBERSHIP OF PROFESSIONAL BODIES/ LEARNED SOCIETIES

- Associate Member, Medical Lab Science Council of Nigeria (RA 12433)
- Nigerian Biological Safety Association (NiBSA)



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ABST-NIC-19-014



DR. AGI VIVIAN NKEMKANMA

Dr Agi Vivian Nkemkanma was born on the 7th of March into the family of Elder N. P Olowu (Late) and Mrs Margaret Olowu in Ogba Egbema Ndoni Local Government Area of Rivers State, Nigeria. She attended Sea Bed Model Primary school (1988), Government Girls Secondary School Harbour Road (1993) and Rivers State University of Science and Technology P.H where she obtained Bachelors in Medical Laboratory science (B. MLS) in 2006.

She started her career as a Medical Laboratory Scientist with the Rivers State Primary Health care Management Board in 2009 but because of her quest for knowledge she went ahead for further studies in the University of Manchester, United Kingdom for her Master's degree (Medical microbiology) in 2012 and Ph.D (Medical Microbiology) in the Rivers State University (RSU) Port Harcourt, Nigeria in 2017. She got an appointment by The Rivers State Governor Chief (Barr) Ezebunwo Nyesom Wike as a Lecturer in the Department of Medical Laboratory Science, RSU, PH where she has been working till date. She has several publications and has participated in trainings and conferences both locally and internationally. She is a member of the Medical Laboratory Science Council of Nigeria (MLSCN), Nigerian Biological Safety Association (NIBSA), Institute for Biomedical science (IBMS), Society for General Microbiology (SGM), Nigerian Society for scientists in Infectious Diseases (NSSID) and American society for microbiology (ASM).

She is a good Christian, a loving wife to her husband and a wonderful mother of 3 beautiful children.

ABST-NIC-19-015



DR. RHODA NWALOZIE Ph.D, AMLSCN

Dr. Rhoda Nwalozie is a practicing Medical Laboratory Scientist, a Medical Microbiology Specialist with the Rivers State University Teaching Hospital, Port Harcourt. She was born on the 25th May, 1969 at Asarama-Ija, Asarama in Andoni Local Area of Rivers State. She obtained her first School Certificate in State School Inyongoron, Asarama in 1981 and West African Examination Council General Certificate of Education in 1986. She graduated from University of Port Harcourt in 1998 in Microbiology/ Virology and proceeded for National Youth Service Corps in 1999-2000. As a Scholarly Scientist, She went further in her studies and obtained Master of Science (M. Sc.) Degree in Environmental Management in 2004 at Imo State University, Owerri, M. Sc. Degree in Medical Microbiology from Rivers State University in 2009 and Doctor of Philosophy in Microbiology (Medical Microbiology) from the University of Port Harcourt (UPH) in 2018.

She is trusted, dedicated, diligent and hardworking in any assigned duty. Administratively, she has held several administrative positions as a civil servant in the field of Medical Laboratory Science, Microbiology and Parasitology etc. In religious and social-cultural organizations she also served in various administrative positions.

She is a very dedicated and active member of several learned societies, e.g. Nigerian Biological Safety Association (NiBSA), Nigerian Society of Microbiology (NSM), Organization of Women in Science in developing World (OWSD), African Society for Laboratory Medicine (ASLM), Association of Medical Laboratory Scientists of Nigeria (AMLSN), Association of Female Medical Laboratory Scientists of Nigeria (AFMLSN), Parasitology and Public Health Society of Nigeria (PPSN) etc.

Dr. Rhoda Nwalozie as a Laboratory Researcher, She has presented papers at conferences and published articles in reputable journals of high impact factor. She has also attended local and international conferences and workshops and served in various capacities as facilitator and committees at International, National and Local Organizing Committees.

She has also mentoring and lecturing students at higher learning and received outstanding awards. She is happily married with Children



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ABST-NIC-19-016



MR. OYEDIRAN OYEWALE A:

Mr. Oyediran Oyewale A: Science Laboratory graduate specializing in Microbiology/Virology option. PGD in Food Science & Technology and a Master degree in Microbiology ,Epidemiology of Hemorrhagic RNA viruses of Public health importance (in view) .My working experiences span across Teaching, Researches, surveillance, monitoring and Evaluation in various Projects and trials in I.I.T.A., ILRI, AfricaRice ,EU-Prime,University of Ibadan. I had value added trainings and courses within and outside Nigeria. Biosafety for human health and the environment in relation to potential release of genetically modified Vectors, by

WHO/TDR in Madurai India, 2009, EMBO Workshop on Human RNA Viruses , by ICGEB in Istanbul, Turkey October 6-8, 2014, STEM CELLS Symposium” 28-31 January 2018, MIAMI, United States , Biorisk Management-Trainer Development Program (BRM-TDP) Workshop Cohort 3 22-26 July 2019, in Abuja Nigeria, International Biosafety & Biocontainment Symposium: Biorisk and Facility Challenges, Baltimore, Maryland, USA February 11-14, 2019, Advanced Biorisk Management Workshop 17- 21st July 2017 Organized by (NiBSA) and Sandia National Laboratories Ibadan, Nigeria, Foundation Biorisk Management Workshop June 14-16, 2016 Organized by Nigeria Biological Safety Association (NiBSA) and Sandia National Laboratories Lagos, Nigeria e.t.c..My interests are: molecular/biotechnology tools, genome sequencing, and Nanotechnology in diagnostics of infectious diseases, microbial/genetic manipulations, non-human primate research, infectious diseases , surveillance, control, and PoC diagnostics Kits R & D., I have membership of many organizations: *Nanopaprika.eu - The International NanoScience Community, NanoAfrica- Africa NanoScience Community, NIGERIAN BIOLOGICAL SAFETY ASSOCIATION (NiBSA), Fellow ,Nigerian Institute of Science Laboratory Technology Nigerian Field Society, ABSA International, International Union of Biochemistry and Molecular Biology e.t.c.*

ABST-NIC-19-017

DR. AHANEKU IHERUE ANTHONY OSUJI



Dr. Ahaneke Iherue Anthony Osuji works with the University of Abuja Teaching Hospital, Gwagwalada, Abuja as Deputy Director of Medical Laboratory Services (Microbiology). He obtained a Ph.D. degree in Medical Microbiology from Nnamdi Azikiwe University, Awka, Nigeria in 2019. His first degree was in Microbiology from the University of Benin, Nigeria in 1984 and M.Sc. Medical Microbiology and Parasitology from the University of Calabar, Nigeria in 1992. He has a postgraduate Medical Laboratory Science (Bacteriology) registerable with Medical Laboratory Council of Nigeria. Also, he has a Master degree in Public Administration from Nigerian Defence Academy, Kaduna, Nigeria in 2015. Dr. Osuji has worked with Institute of Human Virology, Nigeria from 2007 to 2011, as a Laboratory Quality Assurance officer where he gained significant experience in Laboratory Quality Management and Laboratory biosafety. Presently, he is a member of the University of Abuja Teaching Hospital Health Research Ethics committee. Dr. Osuji has attended several local and international training among which is Nigerian Bio-security Risk Assessment Workshop at Sandia National Laboratories, Albuquerque, New Mexico USA in 2016. He has 7 Publications in Peer-reviewed journal; author of a bestselling book on Handbook on HIV/AIDS Prevention. He is an avid reader, writer and researcher. Dr. Osuji is a member of several professional bodies among which are, Nigerian Biological Safety Association, American Society of Microbiology, Association of Medical Laboratory Scientists of Nigeria etc. He is happily married to Mrs. Nancy Osuji and their marriage is blessed with 3 children.



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ABST-NIC-19-018



OLOYEDE M. WHINGAN

Oloyede M. Whingan holds a Bachelor of Science (BSc.) degree in Zoology, and two separate Postgraduate Diplomas in Disaster Risk Management (DRM) and Environmental Management; and certifications/membership of the following professional bodies:

- Nigerian Biosafety Association (NiBSA)
- Nigerian Environmental Society (NES)
- International Institute of Risk and Safety Management (IIRSM) United Kingdom.
- International Federation of Biosafety Associations (IFBA)
- Institute of Safety Professionals of Nigeria (ISPON)
- Nigerian Institute of Management, (NIM)

Currently works as the Health Safety and Environment (HSE) Officer for 3ADB Limited (Design and Build Services). The following are some of the notable projects I have supervised as HSE Officer:

- Development and on-site implementation of HSE Plan for the construction stage of project-Provision of a BSL3 Biological Containment Laboratory at the National Veterinary Research Institute, Vom, Plateau State, Nigeria.
- Development and on-site implementation of HSE Plan for the construction of Biological Safety Levels (BSL 2 & 3) and Biobank facility at Mainland Hospital, YabaLagos.

Volunteerism:

- Federal Ministry of Labour and Employment (FML&E) / International Labour Organization (ILO) committee member for Commemoration of World Day for Occupational Safety and Health at Work.
- Proposed Environmental Management Plan for Ado-odo/Ota Local Government Area (LGA), Ogun state.

ABST-NIC-19-019



GLORIA UHWACHE MICHAEL

Gloria U. Michael is a graduate of Ahmadu Bello University, Zaria from the Department of Microbiology. Proceeded to Federal College of Veterinary and Medical Technology, Vom for Associate Program in Medical Laboratory Science as a licensed professional and an Associate of Medical Laboratory Science Council of Nigeria. She Worked with Medicom Lab, Nigeria, as a Medical Lab Scientist and logistic officer. She then got employed with Federal Teaching Hospital, Gombe as a Medical Laboratory scientist in 2010 and rose from that position to Principal Medical Laboratory Scientist which holds to date. Gloria is skilled in performing, conducting and analyzing laboratory assays and equipment troubleshooting. Coupled with this, Gloria is the Quality Assurance officer of the PEPFAR Lab in conjunction with Centre for Integrated Health Program (CIHP), Nigeria where she ensures the implementation of quality management system, as well as the Lab Focal Person for the Tuberculosis Unit. She has strong organizational skills, enjoys working in a high energy work environment and she is an adaptive team player. She's well trained in continuous quality improvement organized by CIHP and in Biorisk Management at the Foundation, Advanced and Consolidated training levels. Also, she is a certified Biorisk Manager, having successfully completed the Trainer Development Program under the auspices of Sandia National Laboratories, Albuquerque, New Mexico, USA. Additionally, Gloria practices under regulation by the Medical Laboratory Science Council of Nigeria (MLSCN) and she is a member of the Nigeria Biological Safety Association (NiBSA) as well as the African Society for Laboratory Medicine (ASLM), and the International Association of Public Health Logisticians (IAPHL).



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ABST-NIC-19-021

OLASUMBO FUNMILAYO



Olasumbo Funmilayo Ashcroft is a Medical Laboratory Scientist by Profession and is interested in research that cut across Medical Microbiology. She holds a Master of Science degree in Medical Laboratory Science (Medical Microbiology), with many scientific and academic publications in reputable local and international journals. She is currently undergoing her PhD in Medical Mycology and aspires to be in the forefront of novel discoveries in the specialty. She is interested in the fungi *Candida auris* and intends to characterize the specie using Molecular Technology. She is also an advocate of positive Biosafety culture and likes to emphasize the need for Risk assessment, characterization and Mitigation in Diagnostic laboratories. She holds an IFBA Professional Certification in Biorisk Management. Currently, Mrs Ashcroft is a Lecturer with the department of Medical Microbiology, School of Medical Laboratory Science, Usmanu Danfodiyo University Sokoto (UDUS), Nigeria. She is happily married and blessed with children.

ABST-NIC-19-022

PROF. ANNA MOHAMMED MALGWI (FESN).



Prof. (Mrs.) A. M. Malgwi hails from Garkida, Gombi LGA of Adamawa State, born in to the home of Mr. and Mrs. E. D. Amos on the 19th of September, 1962 in Kaduna.

She began her formal Education at Saint Paul's Primary School Jos (1968-1969); Holy Trinity Primary School, Maiduguri (1969 – 1970) & North Garkida Primary School, Garkida (1970 – 1974). Government Girls' Secondary School Yola IN 1974-79. 1982 'A' Level IJMB; Ahmadu Bello University (ABU), Zaria n 1982 – 1986 (B.Sc. Agric.); M.Sc. in 1993-1998 (M.Sc. Crop Protection) and (PhD Crop Protection) at ABU Zaria 2007. Anna M. Malgwi is a Professor of Agricultural Entomology in 2014. She worked with Pest Control Unit in MOA, Maiduguri from 1989-92 as Asst. Zonal Coordinator and later became an Assistant Research Fellow (1992-98) Dept. of Crop Protection, ABU/IAR, Zaria. She has attended various workshops and conferences: MASHAV/CINANDO, Israel, BIOCICON in India, ENTOMA in Malaysia, ICE at Orlando USA; UN Women, USAID, IRC/ERC, WORLDBANK (HIV/AIDS), Camp Coordination and Camp Management (CCCM) etc. She held various positions as SIWES, UG Level & Seminar Coordinator, Exam Officer, PG Coordinator, School Representative to Senate, Member of University Governing Council 2013-17 and served in various committees in Finance and General Purpose, Accreditation of Schools/Faculty both internally and externally. Academically, she has mentored and graduated over 30 UG, 22 masters & 3 PhD students, currently supervising 6 PhD & 3 M.Sc. students. She is a virtuous, dedicated woman activist, a Mother, mentor and an Academic per excellence the first female Professor of Agricultural Entomology in the Northeast who earned the prestigious Award of the Fellow of the Entomology Society of Nigeria (FESN). She has published 43 journals, over 20 technical & book/book chapters, over 27 reports and many radio and television interviews and discussions all to her credit. She is a member of ESA (Entomological Society of America) 2016-18 and Nigeria Biological Safety Association (NiBSA) 2016-date. She is the currently National Treasurer of ESN. In the community she has served as a Treasurer, Fin. Sec., President of many women organizations. She is married to Distinguished Professor of Genetics & Cytogenetic, Prof. M. M. Malgwi with 3 children.



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ABST-NIC-19-023



AZIKE CHIDIMMAANTHONIA

I am Azike Chidimma Anthonia, a Medical laboratory scientist and a lecturer in the department of Medical laboratory science, Rivets State University. I attended Loretto special science school Agulu where I obtained Senior Secondary School Certificate Examination. I bagged first degree in Medical laboratory science with First Class Honours from Rivers State university in 2013. In 2018 I bagged Masters degree in Medical Microbiology with research interest in Molecular biology and Diagnostics. I am currently undergoing a Ph.D program. I lecture Medical Microbiology courses including Parasitology, Diagnostic microbiology and Mycology. I also supervise undergraduate research projects.

I have attended several trainings and conferences including Sanders sponsored NiBSA training on Biosafety and Biosecurity held in Best Western hotel in Port Harcourt in the year 2016, NiBSA workshop and conference held in Barcelona hotel Abuja in August 2018. I have publications recognized by Google scholar.

I hail from Igbo-ukwu in Aguata Local Government Area, Anambra state. I am happily married to Barr Martins Azike and the marriage is blessed With Three children.

ABST-NIC-19-024



OSAOSAGIEDE OMO EMMANUEL

Osagiede Omo Emmanuel obtained MSc. in Conservation Biology 2013 from A. P. Leventis Ornithological Research Institute (APLORI), University of Jos, Plateau State and BSc. In Zoology 2009 from Lagos State University, Nigeria. He is a Freelance Ecologist, Conservation Biologist and an Ornithologist presently consulting for Nigerian Conservation Foundation (NCF) and Nature and Biodiversity Conservation

Union (NABU) to establish a long term Monitoring and Conservation of bird species in Omo Forest Reserve, Ogun State. He is also involved in Migratory Water Bird Project by empowering the communities to take action towards reducing identified threat capacity in order to enable more effective prioritization of conservation effort in five wetland communities in Ojo, Lagos State. He also consult for NCF on International Waterbird Census (IWC).

ABST-NIC-19-025



OLU, JOSHUA

Olu, Joshua is an astute environmentalist with specialization in environmental science, policy and management. He studied at Lagos State University (LASU) (B. Sc. Hons), National Institute of Business Management (NIBM), Chennai, India (MBA), Olabisi Onabanjo University (OOU) (MPA), Lagos State University (LASU) (M. Sc.), Nigeria. Olu's passion for the biosecurity management with focus on environment made him to go into lots of research work on environment resource management. He is also good in information and communication technology with a focus on web application and software development. Olu had supervised lots of academic research especially in environmental disciplines (Waste management, climate change, toxicology etc.), and he is very good with statistical analysis. He is a member of Environmental society of Nigerian and Nigeria Biological safety association. With a background in public policy and governance, Olu is highly interested in improving the environmental governance that will lead to a secure and improved environment for lives around him.



ABST-NIC-19-026



ADETUNJI BAMIDELE SHADIAT

Adetunji Bamidele Shadiat (Mrs.) born In Hampstead, UK Hails From Lagos State ,nigeria. she Was Trained At The Lagos State University Where She Obtained A Bsc/ed In Biology Education (1999-2003), she Also Obtained A Masters In Educational Management (2012) From Lagos State University, Also She Recently Obtained An Msc (2019) In Zoology and Environmental Biology From Lagos State University Where Her Focus Was On The Insecticidal Effectiveness of Two Plant Products And Extracts On Insect Pests Of Cowpea. she Currently Works As A Researcher At The Lagos State University, she Had Presented Papers That Relates To Biosafety At Conferences Within Nigeria. she Is a Member Of Nigeria Biosafety Association And She Is Currently Working On The Knowledge, attitudes and Practices About Tuberculosis Among People living In Ojo Local Government, Lagos. her Hobbies Are Networking, listening To Music Research And Travelling.

ABST-NIC-19-028



DIANA ATWIJUKA

Uganda National Health Laboratory Services, Ministry of Health.

Diana Atwijuka is a Medical Laboratory Scientist with 9 years' experience (4 years in clinical laboratory and 5 years in Health system strengthening sector). She earned her Bachelor's degree from Mbarara University of Science and Technology –Uganda and a Diploma in Medical Laboratory Technology by Makerere University.

Diana is the Program Officer- Safety in the national Bio-risk Management coordination office at National Health Laboratory Services, Uganda Ministry of Health since May 2015.

She is responsible for coordinating and managing the Biosafety Biosecurity trainings, mentorships and annual audits in the ministry of Health- Uganda. She was part of the team of experts that developed the national Biorisk management training and audit curricula.

In addition, she is passionately engaged in Health System Strengthening as a national trainer and coach for health workers in Laboratory Quality management systems and other Quality improvement indicators in the integrated health care system.

She is a member of the Biosafety Association of Uganda (BAU), African society of Laboratory Medicine (ASLM), International Federation of Biosafety Association (IFBA) and a member of the National Task Force for One Health in Uganda.

ABST-NIC-19-030

AL-MUKHTAR YAHUZA ADAMU

Al-Mukhtar Yahuza Adamu born in 1971 is an academician and Medical Laboratory Scientist for over 20 years. He has contributed to his State and National development through mentoring and supervising of Medical Laboratories aspiring for National and International Accreditations. While assisting his junior colleagues in building their capacities on the bench, he has also helped his State in rendering technical advices in HIV, Malaria and TB Control programmes. Mr. Adamu is a Ph. D holder in Medical Microbiology, and happily married with 5 kids.



NiBSA

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ABST-NIC-19-031

GODIYA DANIEL UMARU



My name is Godiya Daniel Umaru, a Female. I was born on 4th September, 1981. I am Married, hails from Kaduna State and an indigene of Nigeria.

I am a Licensed Assistant Chief Medical Laboratory Scientist with a Bachelor degree in Microbiology, and Associate in Medical Laboratory Science (AIMLS) with a Specialty in Virology. I am a Civil servant working in General Hospital Sabon-Tasha, which is a Public Health Facility under the Kaduna State Ministry of Health.

I am a member of NiBSA and have been trained in Biorisk Management, Advanced Biorisk Management and Project Based Mentoring (PBM) both organized by NiBSA and Sandia Laboratories. I have executed a Project tagged “*The Assessment Of Risk Associated With Waste Generated In General Hospital, Sabon-Tasha, Kaduna State. Nigeria.*” Which is supposed to be presented at the 2nd Annual NiBSA conference as a Poster. As a Member of the Team of Kaduna NiBSA Ambassadors we have done step down trainings on Biorisk Management in some health facilities in Kaduna metropolis.

Other trainings attended are ; HIV diagnosis, care and management, Epidemiological survey, Laboratory Equipment maintenance, Logistics Management for HIV/AIDS Commodities, Laboratory Accreditation Assessment and Quality Management systems, just to mention a few.

Some duties performed include ; CD4 enumeration, Viral load (sample separation, storage and transport), HIV Counselling and Testing, Laboratory Audit, Serological Analysis, Quality Assurance, Dried Tube Specimens production, Equipment calibration, Supervision and Training.

ABST-NIC-19-032, 033



DR ANTHONY BABAJIDE OJEKALE

Dr. Ojekale, Anthony Babajide was born in 60sto the family of Late Mr Samuel OladejoOjekaleand Mrs Maria OgunbankeOjekale, both from Akinmoorin, Oyo State. He attended Surulere Baptist School, Surulere and Nazareth Grammar Commercial College, Ibonwon, Epe, both in Lagos State where he had his primary and secondary school education in 1978 and 1983 respectively. He proceeded to Federal Government College,Ijanikin, Lagos for his A/L in 1984. Dr Ojekale had his tertiary education in Lagos State University, Ojo,where he graduated with B.Sc(Hons) in Biochemistry in 1988. He progressed to the University of Lagos for his Master's degree, which he completed in year 1992.

Dr.Ojekale joined Lagos State University academic staff as Assistant lecturer in 1996He advanced for his doctoral degree programme in the University of the Western Cape, Cape town, South Africa where he obtained his PhD in Biotechnology in 2011.

Dr Ojekale has held various administrative positions in Lagos State University and chairman different committees and been members of various committees. He is presently an Associate Professor and Acting HOD of the Department of Biochemistry. His research interest is on plants (ethnomedicine and response to stress). He is a member of a number of professional bodies both in Nigeria and abroad. He has numerous publications in peer reviewed journals and has attended conferences both at the local and international levels.Dr.Ojekale is happily married with children.



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CONFERENCE SUB-COMMITTEES

The composition of the conference sub-committees and membership are as follows:



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ii Scientific Committee

Dr. A. O. Bola Oyefolu (Head), Dr. Rhoda Nwalozie, Dr. Holy Brown, Mrs. Chioma Benjamin-Puja



iii. Secretariat & Registration Committee

Dr. Kingsley Ochei (Head), Elder Emmanuel Ejodamen, Ms. Comfort John, Ms. Gloria Michael, Mr. Whingan Oloyede



iv. Pre-conference Committee

Dr. Hassaini Ularanu (Head), Mr. Mukhtar Yeldu, Ms. Gloria Michael, Mr. Anthony Abraham



vii. Security Committee

Mr. Abraham Anthony (Head), Dr. A. O. Bola Oyefolu, Dr. Holy Brown.



vi. Media & Publicity Committee

Mr. Mukhtar Yeldu (Head), Ms. Gloria Michael, Mrs. Chioma Benjamin-Puja, Elder Emmanuel Ejodamen.



iv. Protocol, Logistics & Welfare Committee

Hajia Hajara Yusuf (Head), Mr. Whingan Oloyede, Mrs. Comfort John.



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APPRECIATION

We sincerely wish to appreciate all guests of honour, special guest, participants, the media, stakeholders and our partners for your contributions, towards making the 2019 NiBSA Conference a huge Success

As you all Travel back to your destination, we wish you safe journey

See you all in 2020

Signed:

Dr. (Mrs.) Stella N. Udo

Chairman Conference Planning Committee



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