

CURRICULUM VITAE

PROFESSOR (MRS.) ESI AWUAH

**VICE-CHANCELLOR & PROFESSOR OF
ENVIRONMENTAL HEALTH AND SANITATION**

**UNIVERSITY OF ENERGY AND NATURAL
RESOURCES**

January 2016

Professor Mrs. Esi Awuah

Professor Mrs. Esi Awuah is the first born of Mr. Emmanuel Broni Asare of Akim Oda, former Deputy Chief Conservator of Forest, Ashanti & Brong Ahafo Region and Madam Margaret Annan of Gomoa Dago, a retired Nurses Aid. After a successful completion of both her Ordinary and Advance level education at Akim Oda and Aburi Girls Secondary school in 1973 and 1975 respectively, she enrolled in the Biological Sciences program at the then University of Science and Technology, now Kwame Nkrumah University of Science and Technology (KNUST) in Kumasi for a Bachelor of Science degree.

She joined the Department of Civil Engineering, KNUST, as a Research Assistant after her national service at the then Forest Products Research Institute. In 1981, Prof. Mrs. Esi Awuah obtained a WHO scholarship to study Environmental Science at the College of Environmental Science and Forestry at the State University of New York USA. In 1998, she obtained a fellowship from the Netherlands Government to undertake a PhD in Wastewater Treatment. Her doctoral thesis on ‘Pathogen Removal Mechanisms in Macrophyte and Algal Based Waste Stabilization Ponds’ served as a blueprint for the subject matter.

Prof. Mrs. Esi Awuah rose through the ranks in her carrier as a lecturer whiles at KNUST. She has taught several courses at KNUST, University of Cape Coast (UCC) and University of Education Winneba (UEW) at both the undergraduate and graduate levels. She is well known for her lecture notes which are sought after by students across universities in Ghana and other countries. As a distinguished researcher, she has over 100 publications in refereed journals, conference papers, environmental reports, book chapters and has also supervised more than 200 undergraduate students with over 52 postgraduate students at the Masters’ and PhD levels.

Prof. Mrs. Esi Awuah has a considerable University managerial and administrative experience. From 2004-2006, she was Head of the Centre of Environment and Technology at the Institute of Science and Technology for Africa. She was also the Dean of the Faculty of Civil and Geomatic Engineering from 2008 to 2010 after serving as Head of the Civil Engineering Department from 2006 to 2008 all in KNUST. She served on KNUST’s Disciplinary Committee, the College of Engineering Appointments and Promotion Committee. Currently, she is an executive board member of the Organization of Women in

Science from Developing World (OWSD) and Zoomlion Ghana. She is also a member of the World Water Supply and Sanitation Collaborative Council (WSSCC), Advisory Board member of International Foundation of Science (IFS), Water Aid Ghana, Global Advisory Board for Africa Sanitation 'Think Tank' and several others.

Though Prof. Mrs. Esi Awuah has taught for the past 32 years, she has not limited her teaching to the lecture theatre, but has done community outreach programs on environment and sanitation education across Ghana. In the early nineties, she educated Kotei via KNUST community and addressed their concerns on HIV/AIDS. She again led a team from Cornell University to install water pump at Bimbilla community.

For her meritorious work, Prof. Mrs. Esi Awuah received the UNESCO Mondialogo Award in 2007 for innovative research in engineering. She was also recognized by the Ministry of Local Government and Rural Development in Ghana during the International year of sanitation and received the best research award (silver) for environment, water and sanitation during the first National Science Congress in Ghana in 2011. In 2015, she received an award as a Woman of Excellence during the 3rd Ghana Women of Excellence Award Ceremony organised by Top Brass Ghana in collaboration with the Ministry of Gender, Children and Social Protection.

Prof. Mrs Esi Awuah was made n Honorary Fellow of the Ghana Institution of Engineers in 2014 for her tremendous contribution towards Engineering Education in Ghana.

She was also made a Fellow of the African Academy of Science in November 2015.

Prof. Mrs. Awuah is a devout Christian and worships with the Methodist Church at Mount Zion Society, Kotei, Kumasi. She is a church organist and a member of the Singing Band group. She is married to Prof. R.T. Awuah, a Plant Pathologist and former Principal of the College of Agriculture at Ashanti Mampong Campus of UEW. They are blessed with two sons.

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LIST OF ABBREVIATIONS/ACRONYMS

ACP	Africa Co-operation Partners
ADB	Agricultural Development Bank
AIDS	Acquired Immune Deficiency Syndrome
AMA	Accra Metropolitan Assembly
CapWa	Capture of Evaporated Water with Novel Membrane
CERR	College of Engineering Research Retreat
CGIAR	Consultative Group on International Agricultural Research
CPP	Convention People's Party
CSIR	Council for Scientific and Industrial Research
DAAD	Deutscher Akademischer Austausch Dienst (German Academic Exchange Service)
DANIDA	Danish International Development Agency
EAWAG	Eidgenossische Anstalt für Wasserversorgung Abwasserreinigung und Gewässerschutz (Federal Institute of Water Supply, Wastewater Treatment and Water Pollution Control)
EIA	Environmental Impact Assessment
ERTEP	Environmental Research, Technology, Education and Policy
EU	European Union
GCE	General Certificate of Education
GNAT	Ghana National Association of Teachers
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit (German Technical Co-operation)
IAIA	International Association of Impact Assessment
ICRAF	International Centre for Research in Agro forestry
IFS	International Foundation for Science
IHE	Infrastructural Hydraulic and Environmental Education
IMME	Institute of Mining and Mineral Engineering
INORMS	International Network of Research Management Societies
IWA	International Water Association
IWMI	International Water Management Institute
KCCR	Kumasi Centre for Collaborative Research
KMA	Kumasi Metropolitan Assembly
KNUST	Kwame Nkrumah University of Science and Technology
MVIP	Mozambique Ventilated Improved Latrine
NDC	National Democratic Congress
NGO	Non Governmental Organization

NICHE	Netherlands International Co-operation of Higher Education
NPP	New Patriotic Party
NRI	Natural Resource Institute
NUFFIC	Netherlands Organization for International Co-operation in Higher Education
OWSD	Organization for Women in Science for the Developing World
PNC	People's National Convention
PoWER	Partnership of Water Education and Research
SAIL	Netherlands Government International Development Fund
SANDEC	Department of Water and Sanitation in Developing Countries
SERR	School of Engineering Research Retreat
SHEP	School Hygiene Education Program
SNOWS	Scientists Networked for Outcomes of Water and Sanitation
SPLASH	European Water Initiative Research Network
SUNY	State University of New York
SWITCH	Sustainable Water Improves Tomorrow City's Future
TALIF	Training and Learning Information Fund
TWAS	Third World Academy of Arts and Science
TWOWS	Third World Organization of Women in Science
UASB	Upflow Anaerobic Sludge Blanket Reactor
UENR	University of Energy and Natural Resources
UNDP	United Nations Development Program
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
USA	United States of America
USAID	United States of Agency for International Development
WAEC	West Africa Examination Council
WASH	Water Sanitation and Hygiene
WANet	West Africa Water Network
WEDC	Water Engineering and Development Centre
WHO	World Health Organization
WIST	Women in Science and Technology
WSEAS	World Scientific and Engineering Academy and Society Engineering
WSSCC	Water Supply and Sanitation Collaborative Council

1.0 BIODATA

Name	Prof. Mrs. Esi Awuah (Nee Augustina Asare)
Sex	Female
Nationality	Ghanaian
Date of Birth	14 th September, 1954
Business Address	The Vice-Chancellor The University of Energy & Natural Resources, Sunyani, Ghana Tel: +233 (0) 352 192802 Email: vc@uenr.edu.gh or esiawuahrt@gmail.com
Present Position	Vice-Chancellor and Associate Professor of Environmental Health and Sanitation
Profile	A well trained, well networked and a highly motivated goal achiever; Creative and practically oriented with good leadership and managerial skills; Well positioned to lead a Tertiary Academic or Research Institution and also direct development projects in Environment, Water and Sanitation.

2.0 EDUCATION/TRAINING

School or University	Dates	Qualifications earned
Akim Oda Secondary School	1968-1973	WAEC GCE 'O' Level
Aburi Girls Secondary	1973-1975	WAEC GCE 'A' level
KNUST	1975-1979	B.Sc. Hons. (Biological Sciences)
College of Environmental Science and Forestry, SUNY Syracuse New York USA	1981-1985	MS Environmental Science
UNESCO-IHE Netherlands	1998-2006	PhD (Wastewater Treatment) (Sanitary Engineering)
Imperial College, London, UK	May, 1990	Certificate in Environmental Engineering (10 weeks)

University of Leeds, UK	1990	Certificate in wastewater analysis (two weeks)
UNESCO-IHE, Netherlands	July, 1997	Certificate in curriculum development and didactics in the field of water and sanitation with laboratory work in microbiology, Water Chemistry and process technology (3weeks)
Lancaster University, UK	June, 1992	Certificate in Environmental Modelling (3weeks)
UNESCO-IHE, Netherlands	July 1998	Certificate in International course on anaerobic wastewater treatment (2 weeks)
Hohai University Nanjing, China	June 2004	Certificate in creative learning (1 week)
Haggai Institute of Leadership Training, Hawaii USA	January-Febrary2008	Certificate in leadership (Four weeks)

3.0 RECORD OF UNIVERSITY TEACHING

- ❖ Associate Professor, Dept. of Civil Engineering 2002 to 2012
- ❖ Senior Lecturer, Dept. of Civil Engineering 1996-2002
- ❖ Lecturer Dept. of Civil Engineering 1986-1996
- ❖ Research Assistant in the Civil Engineering Dept. 1980-1981
- ❖ Research/Teaching Assistant at Forest Products Research Institute
(Now FORIG) 1979-1980

3.1 Courses taught at the University level

Diploma courses

a) Environmental Science I (Man and his environment) (CE 141)	1986 – 1996
b) Environmental Science II (Measurement of environmental Quality parameters) (CE 142)	1986-1996
c) Communicable Diseases and Vector Control (CE 148)	1986 – 1996
d) Industrial Wastes treatment and Air Pollution Control (CE 234)	1992
e) Occupational Health and Safety (CE 246)	1988 – 1996
f) Construction Technology	2011

BSc courses

a) Environmental Quality Engineering I (Wastewater treatment) (CE 364)	1987 -1998 2008 to 2012
b) Community Health	2010
c) Construction Technology	2011
d) Environmental Quality Engineering II EIA and Landfill design/sanitation policies (CE 464)	1987 to 2012
e) Diseases and Vector Management of Water Development Projects (CE 263)	1988 -1998
f) Introduction to Environmental Engineering (CE 264)	1999 to 2010
g) Environmental Studies (CE 155)	1995 to 2012
h) Pollution control	1988-1995

MSc courses

a) Environmental Microbiology (CEWS 531)	1986,1998, 2005, 2007 to 2012
b) Water Quality Analysis and Management (BIOL 507)	1996 -2000
c) Occupational Health and Safety (BIOL 502)	1996 - 1998

d) Environmental Issues and Impact Assessment (CEWS 541)	1996 to 2012
e) Wastewater management (CEWS 562)	2009 to 2012

4.0 RESEARCH AREAS/CAPABILITIES

- ❖ Water supply and sanitation services delivery
- ❖ Natural treatment systems for water and wastewater
- ❖ Faecal sludge management
- ❖ Environmental and risk assessment

- ❖ Health and hygiene education

5.0 STUDENT PROJECT SUPERVISION

- i) Undergraduate Projects >180 Completed
- ii) Masters' thesis 40 completed
- iii) PhD Thesis 4 completed and 3 in progress (See 5.2)

Ongoing Doctoral Research

Student	Topic	Expected Year of Graduation
i) Richard Amankwaa Kuffour	Design Criteria for faecal sludge dewatering for effective management	Completed
ii) Peace Kounpe	Resource recovery from wastewater treatment in the City of Benin	Completed
iii) Samuel Fosu Gyasi	Behavioural risk factors and the possible role of arsenic to the development of Buruli ulcer in the Amansie West District, Ghana.	Completed
iv) Prince Antwi- Agyei	Strategic management of faecal sludge in the city of Accra	Completed

v) Peter Owusu Antwi	Wastewater treatment technologies for urban slums	2016
vi) Kobbina Afful	Management of faecal sludge in urban slums	2016
vii) Eugene Effah Asare	Business model development for faecal sludge in urban slums	2016

6.0 PROFESSIONAL EXPERIENCE

6.1 Professional Activities

- ❖ Development of Environmental policy brief for Zoomlion 2015
- ❖ Development of background paper for West African Symposium on hygiene and sanitation (UNICEF Ghana sponsored). 2009
- ❖ EIA for Garden City Mall in Kumasi, Ghana 2008
- ❖ Hygiene education trainer for teachers and co-ordinators for School Hygiene Education Program (SHEP) in Five Districts in the Ashanti Region of Ghana for Community Water and Sanitation Agency of Ghana (ADB funded project through CWSA) 2007
- ❖ Environmental Impact assessment for Calwall Hotel and design of wastewater treatment plant at Osu in Accra 2006
- ❖ Rapid assessment of Private providers for domestic water delivery in rural communities- World Bank funded project through CWSA 2006
- ❖ Environmental health risks assessment of Metal workers Suame 2005
- ❖ Expert on Pollution control training for Middle level managers for the city of Accra Water for African cities for UN Habitat funded project 2004
- ❖ Environmental sanitation and community mobilisation consultant and Team leader for five - small towns water supply for Boanim, Kwamo, Onwe and Kwaso and Juaben CWSA 2003
- ❖ Environmental Assessment for Dutchotel, Teshie Nungua in Accra 2002
- ❖ Health and Hygiene education specialist for Training of artisans on hand dug well construction at Ejisu Besease-CWSA 2002
- ❖ Environmental management plans for Nnuro Kente, Kumasi 2002
- ❖ Environmental Assessment for Medical Research Centre KCCR, KNUST 2002
- ❖ Environmental Assessment for Akuapem Mampong Traditional Medicine Factory 2002

- ❖ Training of sector staff on management of liquid wastes. Ministry of Local Government and Rural Development of Ghana 2001
- ❖ Environmental Assessment for Quarry Activities of Jecomah Enterprise 2001
- ❖ Environmental Assessment for Industrial Chemical Laboratories Kwamo 2001
- ❖ Environmental Management Plans for Guinness Ghana Limited 2001
- ❖ Environmental impact and technology assessment of macrophyte based wastewater treatment technology introduction at Ejura. GTZ 1999
- ❖ Characterisation of industrial waste from Palm Oil extraction effluent and Brewery wastewater (KBL) 1997
- ❖ Development Plan for Key Environmental Issues in Kumasi (KMA) 1996
- ❖ Impact analysis of retrofitting refrigerators with hydrocarbons to protect the ozone layer in Ghana (Friends of Earth NGO) 1996
- ❖ Assessment of urban waste in peri-urban horticulture in Kumasi (NRI, UK) 1995
- ❖ Environmental Impact Assessment of Teshie-Nungua Faecal Treatment Plant (AMA). 1995
- ❖ Environmental Impact Assessment of Landfills in Bolgatanga, Bawku and Wa. World Bank project. Urban II. 1994
- ❖ Coastal Pollution measurements and characterisation of industrial Wastes in Accra (Sogrea, France). 1994
- ❖ Environmental Auditing: Guinness Brewery, Ghana, Ltd. 1994
- ❖ Pond Potential for fisheries studies for the Ghana National Farmers exhibition site at Nkawie via Kumasi for the Government of Ghana. 1991
- ❖ Environmental Impact assessment of a soap factory and design of treatment plant for the effluent. (Appiah Menka Complex Ltd., Kumasi, Ghana). 1990
- ❖ Determination of causes of turbidity and odour in underground and surface rain water tanks, Agogo Hospital. 1988

6.2 Membership of Professional/Academic Bodies

- ❖ Fellow Africa Academy of Science 2015
- ❖ Fellow, Ghana Institute of Engineers (GHIE), 2014
- ❖ Water Supply and Sanitation Collaborative Council (WSSCC), 2007 to date

- ❖ International Association for Impact Assessment (IAIA), 1992-2000; Member of Membership Committee, 1994-95; Training and Professional Development Committee Member, 1996 – 2000
- ❖ African Forum for Mathematical Ecology, Public Relation Officer, 1990 – 1996
- ❖ Third World Organisation of Women in Science and Technology (TWOWS loll now OWSDW), Founding Member, 1988 to date
- ❖ Ghana Association of Women in Science and Technology, Founding Member (WIST) 1991 to date
- ❖ University Teachers Association of Ghana (UTAG) 1986 to date
- ❖ Ghana Science Association 1986 to date

7.0 LEADERSHIP POSITIONS HELD

- Vice-Chancellor, University of Energy and Natural Resources, Ghana 2012 - Date
- Global Advisor for African Sanitation Think Tank. 2013-2015
- Vice-Chancellor, University of Energy and Natural Resources 2012-date
- Director, African SNOWS (Welcome Trust funded) 2009-2012
- Dean, Faculty of Civil and Geomatic Engineering, KNUST 2008-2010
- Head, Department of Civil Engineering 2006- 2008
- Chairman, WANet (West Africa network for water resources Management) Steering Committee 2006-2008
- SWITCH City Co-ordinator 2006 -2011
- Head, Centre of Environment and Technology, KNUST Institute of Science and Technology for Africa 2004 -2006
- Chairman, Library Committee, School of Engineering 2003 -2005
- Sectional Head, Environmental Quality Engineering KNUST 1990-2006
- Acting Manager, Training Network Centre for Water Supply and Sanitation, Kumasi, Ghana 1994
- Bible Class Leader at Mt Zion Methodist Church Kotei Society, via KNUST 1997-date

8.0 BOARD/ COMMITTEE EXPERIENCE (See also 7.0)

- ❖ Executive Board Member Zoomlion Ltd 2011-to date
- ❖ Executive Board Member for Organisation of Women in Science of the Developing World(OWSD) (Africa Regional representative) 2010-2013
- ❖ Member, College of Engineering Appointments and Promotion Committee 2010 - 2012
- ❖ Member, National Task force for establishing two additional Public Universities in Ghana- Development of curriculum for start-up programs 2010
- ❖ Member, Triple S and WashCost (Water and sanitation delivery in Ghana). Project Advisory Board 2009-2013
- ❖ Director, The African SNOWS Project (Development of proposal for capacity building in environmental health, water supply and sanitation for 9 Universities- 3 European and 7 African Universities). 2009-2012
- ❖ Advisory Board member of International Foundation of Science (IFS). 2008-2012
- ❖ Academic Board Member of the University's Disciplinary committee 2008- 2010
- ❖ Member- Scientific Review Committee WEDC conference (Held in Accra, April 2008)
- ❖ Member- Scientific Committee and Organizing committee, Water and Sanitation in International Development and Disaster Relief Conference (Held in May 2008 at Edinburgh. UK)
- ❖ Cognate Member Faculty of Electrical and Computer Engineering 2008-2010
- ❖ Member, Methodist Church Ghana Youth Advisory Board 2007-date
- ❖ Member, Scientific Committee ERTEP Conference July Accra 2007
- ❖ Member, KNUST TALIF steering Committee 2005-2008
- ❖ Member, Academic Board KNUST 2005-2010
- ❖ Member, College of Engineering Board 2005 -2010
- ❖ Member, School of Engineering, Infrastructural committee 2004-2006
- ❖ Member, Editorial Board for the Proceedings of the School Engineering Research Retreat. 2003-2004
- ❖ Member, Committee on School of Engineering Alumni Affairs 2003--2008

- ❖ Member, School of Engineering Library Board. 1995-2002
- ❖ Member, Board of Directors, Training Network Centre for Water Supply and Sanitation, KNUST, Kumasi, Ghana 1989-1994
- ❖ Member, Faculty Board Social Sciences. 1992-1994
- ❖ Co-ordinator for the University of Science and Technology and Ministry of Health, Ghana for a 2-year diploma course for the Ministry of Health in the Department of Civil Engineering. 1991-1998
- ❖ Academic advisor for second year diploma students in Civil Engineering and Environmental Health Technology. 1990-1998
- ❖ Lecturer in Charge, Civil Engineering Departmental Library 1988-1992
- ❖ Lecturer in charge of Environmental Quality Engineering Laboratory. 1987 -1998
- ❖ Academic advisor for second year diploma students in Civil Engineering and Environmental Health Technology. 1989-1990
- ❖ Fellow - Africa Hall 1988-2013
- ❖ Academic advisor for third and final year diploma students in Civil Engineering and Environmental Health Technology programs respectively. 1987 -1988

9.0 AWARDS, FELLOWSHIPS AND RECOGNITIONS

2016	Adinkra Golden Award for outstanding contribution to education in the Brong Ahafo Region of Ghana. Awarded by the Suma Traditional Council on the occasion of their Akwantu Kese Festival 2016 at Suma Ahenkro.
2015	Fellow African Academy of Science
2015	Award as a Woman of Excellence During the 3rd Ghana Women of Excellence Award Ceremony in Accra (Top Brass Ghana & Ministry of Gender, Children and Social Protection)
2014	Honorary Fellow, Ghana Institution of Engineers
2011	Best Research Scientist Award (Silver) for Environment, Water and Sanitation. First Science Congress August 2011 Ministry of Environment Science and Technology Ghana.
2008	Letter of recognition for sanitation in Ghana during the International year of sanitation (Environmental Sanitation Directorate, Min Local Govt. and Rural Dev.)
2007	Certificate of recognition at Mondialogo Symposium on Engineering Research and Innovation organised by Daimler and UNESCO in India.
2006	Distinguished service award received from the Ayigya Circuit of the Methodist Church- Ghana on the occasion of their 170 th Anniversary.
2000	Netherlands Government Fellowship for an Intercontinental research on resource recovery from Wastewater in Colombia, South America

1998-2002	Netherlands Government Fellowship for PhD training at IHE
May 1997	British Council Fellowship for three weeks training in Environmental Modelling at Lancaster University.
March 1991	Association of Commonwealth Universities Fellowship for Research/Study Tour of Nigeria
January 1990	British Council Fellowship for a 10 Week Course in Environmental and Water Resources Engineering. At the Imperial College UK
1990 to 2013	Several recognitions awards from students and staff for excellent performance
October 1988	Third World Academy of Science and Ghana Academy of Arts and Sciences Fellowship for the Participation in a Conference for Women in Science and Technology, Trieste, Italy.
1982-1985	WHO Fellowship for MSc studies at the College of Environmental Science and Forestry, Syracuse, New York, U.S. A
July 1979	World Council of Churches award for Participation in a World Science Conference at Massachusetts Institute of Technology, Cambridge, Massachusetts, U.S.A.
1968-1973	Ghana Cocoa Marketing Board Award for Secondary School Education (Ordinary Level).

10.0 RESOURCE MOBILIZATION

I have networked with several organisations and Institutions bringing in the following funds for collaborative research at KNUST and other Institutions around the globe.

1. 2011 to 2016 Capacity building in sanitation for the urban poor by Bill and Melinda Gates Foundation in collaboration with UNESCO-IHE Netherlands and 6 other Institutions **\$8.5million**
2. 2011 to 2016 EHELD project for capacity building for Liberia Universities in Collaboration with Rutgers University and RTI Washington DC Member Proposal development team. **\$18 million**
3. 2010 to 2013 CapWa EU project for water vapour capturing and energy conservation in industries **€63,000**

4. 2009 to 2014 **Director of the African SNOWS Project** (Development of proposal for capacity building in environmental health, water supply and sanitation for 9 Universities- 3 European and 7 African Universities) for a grant of **£1 million** from Wellcome Trust UK
5. 2006-2010 SWITCH Project involving 32 institutions and 14 countries -Project co-ordinator in Ghana (Total budget for 32 Institutions **€13 Million**). KNUST budget **€250,000**
6. 2006-to 2008 TALIF Steering Committee representative from the College of Engineering **\$1.5million**
7. 2005-2008 World Bank Road and Transportation Engineering Project. Project Director as Head of Department **\$1.85 million**
8. 2005-2007 Faecal Sludge Treatment EAWAG/SANDEC/IWMI Proposal development and PhD Project Supervisor **\$20,000**
9. 2004-2008 NUFFIC capacity building project in water resources and environmental sanitation -Project Director and Resource person **\$1.8million**
10. 2002 to date Partnership of water education and research (PoWER). Technical committee activities and proposal developments students supervision (Project involves several countries and Institutions) **\$120,000**
11. 1996-2000 IHE capacity building in water and sanitation through the SAIL Foundation -Proposal development and resource person for training programs **\$1.5million**
12. 1994-1996 African Development Fund, Washington DC. For training artisans in VIP latrine construction **\$25,000.00**
13. 1991-1997 Central State University/USAID linkage project on environmental assessment and water resources studies- Leader of water quality and Environmental team **\$500,000**
14. 1991-1995 DANIDA Water and Sanitation Projects. Proposal development/Resource Person; Materials Development and training in the Volta Region of Ghana **\$1 million**
15. 1990-1992 International Foundation of Science (Sweden) Composting of solid waste for agricultural purposes Principal Investigator **\$5,000.00**
16. 1987-1992 UNDP/World Bank Project on water and sanitation capacity building. TNC, KNUST. Proposal writing and resource person for training programs.**\$6.3 million**
17. 1986-1996 Ministry of Health Ghana- Diploma training course for environmental health technologists, Course co-ordinator **\$50,000.00**

11.0 RECORD OF SERVICE TO THE COMMUNITY (See also items 7 and 8)

11.1 University

2012-date	Vice-Chancellor, UENR
2011-2012	Chairman of Environment, Safety and Health Committee. College of Engineering KNUST
2006 – 2008	TALIF Steering Committee on KNUST campus
2008 -2010	Disciplinary Committee
1987 – 2003	Environmental Quality Engineering Sectional Head, KNUST
2003 – 2006	Environmental Consultant KNUST
2003 – 2004	Member, Editorial Board for the Proceedings of the School Engineering Research Retreat.
2003 – 2005	Chairperson, Library Committee, School of Engineering
2003-date	Member, Committee on School of Engineering Alumni Affairs
2002-2013	Member, School of Engineering, Infrastructural committee
1992 – 1994	Member, Faculty Board Social Sciences.
1991	Collaborator in the preparation of MSc. course outline in environmental science for the Department of Biological Sciences KNUST
1988 – 1998	Lecturer in charge of Environmental Quality Engineering Laboratory.
1989 – 1990	Academic advisor for second year diploma students in Civil Engineering and Environmental Health Technology.
1987 – 1988	Academic advisor for third and final year diploma students in Civil Engineering and Environmental Health Technology programs respectively.

11.2 National (See 7.0 also)

2012-date	Member Scientific Advisory Board, WaterAid Ghana
2010	Assessment of national environmental sanitation strategic plan
2010	Member, National Committee for the establishment of Two Public Universities in Ghana
2009	Moderator Brain storming on JMP sanitation definition
2009	Workshop organiser and facilitator for (100) leaders of the Methodist Church- Ghana, Ayigya Circuit
2009	Assessment of CSIR promotional material Senior Scientific Officer grade to Principal Scientific Officer grade
2009	Development of background paper for the West African Symposium on Sanitation and Hygiene
2008	Presidential Debate on Sanitation for Flag bearers in the 2008 election in Ghana, 23rd to 26 th September 2008.
2008	Workshop organiser and facilitator on Principles of Leadership and Goal setting for 85 Christian Women in the Methodist Church Ayigya Circuit at Mt Zion Methodist Church, Kotei Society, Ghana in May 2008
2008-date	External Examiner for BSc course in water and Sanitation at the University of Cape Coast, Ghana
2008	Workshop on Principles of Leadership and Goal Setting for over 800 Women at Anglican Secondary School Kumasi November 2008
2007	Voluntary hygiene education training and conflict resolution workshop at Bimbilla in the Northern Region of Ghana
2004	Assessment of promotional materials for the CSIR (Scientific Officer grade to Senior Scientific Officer grade)
2003	Review of National Community Water and Sanitation Policy-CWSA
2003	Review of National Guidelines for National Water Resources Monitoring- Water Resources Commission of Ghana
2000	Moderator National stakeholders' workshop -Water supply and Sanitation, World Bank Programme for CWSA

2000 to 2001	AIDS awareness campaigner Kotei, March, 2000 and May 2001. Wrote a play and staged it twice at the market square; Composed Aids awareness song for the play.
1999 to date	Review of several scientific papers for Ghana Science Journal etc
1999-2005	Examiner for Environmental Impact Assessment, water supply and sanitation courses at Kumasi Polytechnic/Cape Coast Polytechnic
1998 to date	External examiner for Kumasi Polytechnic and Institute of Mining and Mineral Engineering (IMME) MSc. Environmental Science Programme
1997	Environmental Health and Hygiene education facilitator for Bomso Kese community
1996 to date	Organist, Mt Zion Methodist church Kotei Society via KNUST
1995	Training of artisans and women at Anloga, Kumasi on Environmental Health and Hygiene Education and the Construction of 10 Ventilated Improved Pit latrine units for community use.
1995-1996	Organist, Asokwa Methodist Church, Kumasi
1993	Composer of a signature tune for UNDP Water Supply and Sanitation program for the Training Network Centre, KNUST.
1991	National Environmental Education Committee, Ashanti Region.
1990-1996	Water quality issues at the Afram Plains for World Vision International (NGO). - Cornell University/KNUST Collaboration
1990-1992	Part-time lecturer on environmental pollution control and occupational health at the University of Cape Coast, Ghana

11.3 International

2009	External Examiner for a PhD student at Makere University, Kampala, Uganda
2008-date	Scientific Advisor and Mentor-International Foundation for Science Sweden
2008	Facilitator for World Bank/Water Tribune 2 Video Conferences on Water at the Water Expo in Zaragoza, Spain - 26 th June and 1 st July 2008.
2007-2011	Member, Scientific Advisory Board of SPLASH for European Research Area Network

2000-date	Member, Editorial Board, International Journal of Waste management and Research
1990-1996	Public Relations Officer, African Forum for Mathematical Ecology
1995-1997	Member, International Association for Impact Assessment, (IAIA) membership committee.
1996-1998	Member, Training and Development Committee of the IAIA.
1995	Member, Steering Committee for USAID-University Development Linkages program
1995	Facilitator, environmental impact assessment course for UNESCO/IHE Alumni in Africa.

12.0 MAJOR CONFERENCES/MEETINGS/ WORKSHOPS ATTENDED

1. CIRCLE Project meeting for Supervisors and Co-ordinators Kenya December 8-11th December 2015
2. Bill and Melinda Gates Foundation sponsored sanitation project meeting held in Bangkok, Thailand from 19 to 26 October, 2015. The conference was led by UNESCO-IHE.
3. University of Sweden SLU Stockholm PhD Candidate Examiner Committee chairman, September 2015
4. French Higher Education Collaboration meeting Paris France 2015
5. *Gender and Science meeting for South America Countries in Mexico June 2015
6. Bill and Melinda Gates Foundation sponsored sanitation project meeting held in Cape Town, South Africa from 19 to 26 October, 2014. The conference was led by UNESCO-IHE

7. *5th African Regional Conference of Vice Chancellors, Provosts, Deans of Science, Engineering and Technology (COVIDSET2013). 6-7th November 2013 Gaborone Botswana, paper presented: Creating Synergy between science and engineering education and youth employment.
8. *24th Mole Conference on Water and Sanitation Noda Hotel Kumasi 13-17th August 2013
9. International Congress on Trends in Higher Education in Istanbul Turkey 30th May to 5th June 2012.
10. Annual conference for the Association of African Universities Libreville, Gabon 2012
11. Water and sanitation mapping workshop in Waddani Sudan April, 2012
12. SNOWS Annual General Meeting Copenhagen Denmark May 2012
13. *National Environmental Sanitation Conference at Golden Tulip Hotel Kumasi, December 6 to 9, 2011
14. *Research Management Workshop at Engineering Guest House, KNUST, Kumasi, November 21 to 24, 2011
15. *African Institutions Initiative meeting for directors and vice chancellors, Dar -es Salaam, Tanzania, November 15 to 18, 2011
16. *Ghana Water Forum at the College of Surgeons and Physicians Accra, September 5 to 7, 2011
17. *First Ghana Science Congress Accra Conference Centre August 2011
18. SNOWS Annual General Meeting in Johannesburg South Africa, August 2011
19. Innovative Technologies for Solid Waste Global Market place (Commissioner of Jurors), June 2011, College of Surgeons and Physicians Building, Accra
20. Advisory Board Meeting for SHARE and SNOWS sanitation Projects London School of Hygiene, January 2011
21. *Kick Off Meeting for Water capturing Project at Arnhem, Netherlands October 2010
22. Welcome Trust Directors' meeting London, UK, October 2010
23. *SNOWS Annual General Meeting in Nakuru, Kenya, July 2010
24. *TWOWS General Meeting Beijing China, July 2010
25. *Faecal sludge management training workshop, Accra July 2010
26. *INORMS conference in Cape Town South Africa April 2010

27. *Strategic Planning for Water and Sanitation (2010 to 2030) for the city of Accra Erata Hotel Accra. January 2010
28. *African SNOWS Initiative Meeting Erata Hotel Accra. December, 2009
29. *Netherlands Embassy NICHE Meeting for Priority Areas for Funding. Accra. 24th November, 2009
30. *World Bank Market place workshop on waste management Engineering Guesthouse Kumasi. November 12-14th 2009
31. *West Africa Hygiene and Sanitation Conference. Erata Hotel Accra 2-5th November, 2009 Accra
32. *Welcome Trust Consortium of Directors and Administrators meeting at Arusha Tanzania. 8-10 October 2009
33. *Ghana Global Water Forum College of Surgeons Hall, Accra. 20-22 October 2009
34. *College of Engineering Research Retreat at Koforidua. July, 2009
35. *DAAD Project Development Awards Meeting Berlin, Germany. June 2009
36. *SWITCH Annual Scientific Meeting Belo Horizonte Brazil. November and December 2008
37. *Brain Storming on Shared Facilities. Joint UNICEF/WHO monitoring program on water and sanitation Accra. 10th October, 2008 Moderator
38. *National Stakeholders Conference on Water and Sanitation, Akosombo. November, 2008
39. Presidential debate on Environmental sanitation for flag bearers of PNC, CPP, NDC and NPP. 23-26 September 2008 Organiser and lead resource person. Great Hall KNUST Kumasi Ghana
40. *Water Sanitation in International Development and Disaster Relief Workshop. Edinburgh UK May 27-30th 2008.
41. *Participant, 33rd WEDC International Conference on 'Access to Sanitation and Safe Water: Global Partnerships and Local Actions' Accra, 7-11 April, 2008.
42. SPLASH Scientific Advisory Meeting, France. 3-6 December, 2007.
43. *SWITCH 2nd Scientific and Integration Meeting on Sustainable Water Management Tel-Aviv, Israel. November 25-28, 2007.
44. *SWITCH Visioning and Scenario Planning Workshop, Accra. 23-24 August, 2007.

45. *Environment, Research, Technology, Education and Policy (ERTEP) Conference La Palm Royal Beach Hotel Accra. 16th -19th July 2007.
46. SWITCH Annual General and Scientific Meeting, Birmingham, UK. 7-12th January, 2007
47. *West Africa Network (WANet) for Capacity Building in Water Resources Training. First meeting of partners Accra. October 2006
48. SWITCH kick off Meeting, Delft. April 18-21 2006
49. *Toilet Technology Summit. Kumasi. 7th June, 2005
50. *Round Table Conference on Micro Financing in Africa. Luxemburg. April 27-29th 2005.
51. Alumni Leadership training program UNESCO-IHE Delft Netherlands. September, 2004
52. Training of Trainers Program for Water for African Cities. Nairobi Kenya, July 2004
53. *Creative learning Workshop, Nanjing, China. June 2004
54. *Festival D'Loh Conference on water, Paris, France. May, 2003
55. *Water Conference. Cali Colombia. October 2000
56. *Midrand, South Africa. Conference on Managing Water and Wastewater in the new millennium. May 2000
57. *Women in Science and Engineering Conference, ICRAF Nairobi December 1999
58. *IHE/KNUST Workshop on Environmental Assessment Monitoring and Control, Kumasi. September, 1995
59. *Second Workshop of the African Development Foundation. Entebbe, Uganda. August, 1995
60. *University Development Linkage Programme, USAID Workshop, Arlington, Texas, U.S.A. November, 1993
61. *Conference on Solid Waste Management, Philadelphia, Pennsylvania, U.S.A. November 15-19, 1992
62. *Workshop on the Applicability of Environmental Physics and Metrology in Africa, Nairobi, Kenya, August 1991
63. Workshop on Mathematical Ecology, Italy. November 1990

64. *Conference on the Role of Women in Science and Technology. Trieste, Italy. October, 1988
65. *Workshop of the 1987 International Year of Shelter for the Homeless. Member, Planning Committee, University of Science and Technology, Kumasi, Ghana, March 1988
66. *First National Conference on Waste to Compost. Accra. Ghana, December 1987.
67. *System Engineering Analysis and Modelling Conference. University of Science and Technology, Kumasi, Ghana. July 1987.
68. *National Conference on Composting and Recycling of Wastes, Albany, New York, July 1982.
69. *World Science Conference, Massachusetts Institute of Technology, Cambridge, Massachusetts, U.S.A. Ghana's student representative July 1979.

**Conferences where papers were read*

13.0 PUBLICATIONS

13.1 Theses

1. **Awuah E.** (2006). Pathogen Removal Mechanisms in Macrophyte and Algal Waste Stabilization Ponds. PhD Thesis. Taylor and Francis/Balkema Leiden Netherlands 147pp.
2. **Asare A.** (1985). Mesophilic Composting Processes and Influence of Soil Biota on Human Pathogens and Parasites in Decomposing Human Wastes." M.Sc. Thesis, State University of New York, Syracuse, N.Y., U.S.A.
3. **Asare Augustina** (1979). Isolation and Characterisation of Faecal Bacteria from Workers Canteen Plates. BSc. Thesis, University of Science and Technology, Kumasi, Ghana.

13.2 Journal Articles

1. Kobina Afful, Sampson Oduro-Kwarteng, Eric Ofori Antwi, **Esi Awuah**, (2016). Odour Impact Determination of a Communal Toilet: Field Measurement with Panellists Using Dynamic Plume Method and Dispersion Modelling. Open Journal of Air Pollution, Vol. 5. DOI: 10.4236/ojap.2016.51001.
2. Peter Owusu-Antwi, Richard Buamah, Helen Essandoh, Adane Sewhunegn Molla, **Esi Awuah**, Kweku Akuam Anno, (2015). The Potential of Subsurface Infiltration for the Treatment of Biofil Toilet Technology Effluent. David Publishing 2015, Management Studies, Vol. 3, No. 11-12, 281-299. DOI:10.17265/2328-2185/2015.1112.003

3. Isaac Monney & **Esi Awuah**, (2015). Sanitizing Fecal Sludge for Reuse Using Wood Ash as an Additive. *Recycling* 2015, 1(1), 14-24; doi:10.3390/recycling1010014
4. Leslie Danquah, **Esi Awuah**, Seth Agyemang, Chalotte Monica Mensah, (2015). Investigating the Predictors of Domestic Water Consumption in Urban Households with Children Under Five Years: A Panel Study in the Atwima Nwabiagya District, Ghana. *Journal of Sustainable Development*. Vol 8, No 8 (2015). DOI: 10.5539/jsd.v8n8p1
5. Eugene Appiah-Effah, Kwabena Biritwum Nyarko, Leticia Adum, Eric Oforu Antwi & **Esi Awuah**, (2015). Perception of Peri-Urban Farmers on Fecal Sludge Compost and Its Utilization: A Case Study of Three Peri-Urban Communities in Ashanti Region of Ghana. *Compost Science and Utilization* Volume 23, Issue 4, 2015. DOI: 10.1080/1065657X.2015.1046616
6. Mike A. Acheampong, Ebenezer D. O. Ansa, Martin Y. Woode & **Esi Awuah** (2015). Biosorption of Pb (II) onto Cocos Nucifera Shell and Moringa Oleifera Seeds. *Chemical Engineering Communications*, 202:7, 946-953, DOI:10.1080/00986445.2014.880424
7. E.D.O. Ansah, **Esi Awuah**, A. Andoh, R. Banu, W.H.K. Dorgbetor, H.J. Lubberding & Huub J. Gijzen (2015). A Review of the Mechanisms of Faecal Coliform Removal from Algal and Duckweed Waste Stabilization Pond Systems. *American Journal of Environmental Sciences (Impact Factor: 1.22)*. 01/2015; 11(1):28-34. DOI: 10.3844/ajessp.2015.28.34
8. Leslie Danquah, Charlotte Monica Mensah, Seth Agyemang, **Esi Awuah** (2015). Risk Factors Associated with Diarrhea Morbidity Among Children Younger than Five Years in the Atwima Nwabiagya District, Ghana: A Cross-Sectional Study. *Science Journal of Public Health*. Vol. 3, No. 3, pp. 344-352. doi: 10.11648/j.sjph.20150303.17
9. Peter A. Obeng, Bernard Keraita, Sampson Oduro-Kwarteng, Henrik Bregnhøj, Robert C. Abaidoo, **Esi Awuah** & Flemming Konradse, (2015). Usage and Barriers to Use of Latrines in a Ghanaian Peri-Urban Community. Springer International Publishing Switzerland. *Environ. Process.* (2015) 2:261–274. DOI 10.1007/s40710-015-0060-z
10. Eugene Appiah-Effah, Kwabena Biritwum Nyarko, Eric Oforu Antwi & **Esi Awuah**, (2015). Heavy metals and microbial loads in raw faecal sludge from low income areas of Ashanti Region of Ghana. *Water Practice & Technology* Vol. 10 No 1. doi: 10.2166/wpt.2015.014
11. Kobina Afful, Sampson Oduro-Kwarteng & **Esi Awuah**, (2015). Assessing public perception of odours in a community: case of Ayigyia Zongo, an urban poor community in Ghana. *Journal of Water, Sanitation and Hygiene for Development*. DOI:10.2166/washdev.2015.104

12. Jerry Lawrence Authur, Samuel Fosu Gyasi, Amos T. Kabo- Bah and **Esi Awuah**, (2015). Rainfall Variability and its Impact on Reported OPD Cases of Salmonella typhi Infections in Sunyani, Ghana. Research Journal of Environmental Sciences Volume 9, Number 1, 39-47. DOI: 10.3923/rjes.2015.39.47
13. Peter A. Obeng, Bernard Keraita, Sampson Oduro-Kwarteng, Henrik Bregnhøj, Robert C. Abaidoo, **Esi Awuah**, Flemming Konradsen (2015). Usage and Barriers to Use of Latrines in a Ghanaian Peri-Urban Community. Environmental Processes, ISSN 2198-7491 / DOI 10.1007/s40710-015-0060-z
14. **Esi Awuah**, Samuel Fosu Gyasi, Helen K. Aipa and Agnes Adjei, (2014). Microbial Quality of Sachet and bagged Drinking water: A case Study in Kumasi, Ghana. Research Journal of Microbiology, 9(4): 199-207 DOI: 10.3923/jm.2014.199.207
15. **Esi Awuah** & Samuel Fosu Gyasi (2014). Role of Protozoa on Faecal Bacteria Removal in Macrophyte and Algal Waste Stabilization Ponds, Microbiological Journal 4 (2) 41-50, 2014. ISSN 2153-0696 / DOI: 10.3923/mj.2014.41.50
16. **Esi Awuah**, Richard Amankwaah-Kuffour, Samuel Fosu Gyasi, Henk J. Lubberding & Huub J. Gijzen (2014). Characterization and Management of Domestic Wastewater in 2 Suburbs of Kumasi, Ghana. Research Journal of environmental Science 8 (6): 318-330, 2014. ISSN 1819-3412/ DOI:10.3923/rjes.2014.318.330
17. **Esi Awuah**, Samuel Fosu Gyasi, Helen.M.K. Anipa & Kweku E. Sekyiamah (2014) Assessment of Rainwater Harvesting as a Supplement of Domestic Water Supply: Case Study in Kotei-Ghana. International Research Journal of Public and Environmental Health Vol.1 (6), pp. 126-131.
18. Leslie Danquah, **Esi Awuah**, Charlotte Monica Mensah, Seth Agyemang (2014) Sanitation and hygiene practices in relation to childhood diarrhoea prevalence: The case of households with children under-five years in Ghana. Science Journal of Public Health. Vol. 2, No. 2, 2014, pp. 119-125. doi: 10.11648/j.sjph.20140202.21
19. Samuel Fosu Gyasi, **Esi Awuah**, George Assumeng Koffour, David Kwesi Sampson, Alex Yaw Debrah (2014) Comparative analysis of environmental arsenic and other heavy metals in 2 Buruli Ulcer endemic districts in the Ashanti Region, Ghana JENRM, Vol. I, No. 1, 56-62.
20. Gyasi Samuel Fosu, **Esi Awuah**, Eric Antwi Ofosu, David Kotei and Abbas Kabiru Mohamed, (2014). Environmental sanitation Attitudes in Buruli Ulcer Communities and its Potential Impacts in the Ashanti Akim North District, Ghana. Research journal of Environmental Science, 8: 78-89. DOI: 103923/rjes.2014.78.89

21. Hounkpe, S., Adjovi, E. Crapper, M. and **Awuah, E.** (2014) Wastewater Management in Third World Cities: Case Study of Cotonou, Benin. *Journal of Environmental Protection*, **5**, 387-399. Doi:10.4236/jep.2014.55042.
22. Eugene Appiah-Effah, Kwabena Biritwum Nyarko, Samuel Fosu Gyasi and **Esi Awuah** (2014). Faecal sludge management in low income areas: a case study of three districts in the Ashanti region of Ghana, IWA Publishing 2014 Journal of Water, Sanitation and Hygiene for Development | 04.2 | 2014, Doi: 10.2166/washdev.2014.126
23. Marvin Osei Bosompem, Eric Appiah Agyapong, Samuel Fosu Gyasi and **Esi Awuah** (2014). An Empirical Perspective of Water Quality in Appeadu: A suburb of Kumasi in the Ashanti Region, Ghana. Trends in Applied Sciences Research, 9:144-152 DOI: 10.3923/tasr.2014.144.152,
24. Agyeman, E. O, Acquah A. A. **Awuah, E.** Kwarteng S.O. (2013). Physics-chemical characteristics of solid waste for treatment options: case study of Kumasi 1(6) 117-126
25. Emmanuel Okoh Agyeman, **Esi Awuah**, Lawrence Darkwah, Richard Arthur and Gabriel Osei (2013). Water quantity auditing of a Ghanaian beverage plant. Journal of Water, Sanitation and hygiene for Development. Vol. 3: pages 35-41.
26. Monney, I., Buamah, R., Odai, S.N., **Awuah, E** & Nyenje, P.M. (2013) Evaluating Access to Potable Water and Basic Sanitation in Ghana's Largest Urban Slum Community: Old Fadama, Accra Journal of Environment and Earth Science, www.iiste.org, ISSN 2224-3216 (Paper) ISSN 2225- Vol. 3, No.11, 2013 0948 (Online)
27. Monney I. Boakye R., Buamah R., Anyemedu F.O.K., Odai SN. and **Awuah E.** (2013). Urbanization and pollution of surface water resources in the two largest cities in Ghana International Journal of Environmental Monitoring and Analysis Vol. 1 No. 6 pp279-287.
28. Gyamfi C., Boakye R., **Awuah E.**, and Anyemdu F.O.K. (2013). Application of the Ccme-Wqi Model in assessing water quality of the Aboabo River in Kumasi-Ghana. Journal of Sustainable development. On line Vol 6 no.10
29. Mensah P. Y., Kuffour R. A., Baidoo P. K. & **E. Awuah** (2013). The effect of different percentages of bulking agent (sawdust) on microbial quality of faecal sludge. IWA Publishing 2013, Water Science & Technology, 67,8-2013
30. Kuffour A.R., **Awuah E.**, Adamtey N., Anyemedu F.O.K. & Kone D (2013) Agricultural Potential of Biosolids Generated from Dewatering of Faecal Sludge on Unplanted Filter Beds. Civil and Environmental Research ISSN 2224-5790 (Paper) ISSN 2225-0514 (Online) Vol.3, No.5.
31. Kuffour A. R., **Awuah E.**, Sarpong D., Anyemedu F. O. K & Kone D (2013). Effects of Different Solid Loading Rates of Faecal Sludge on the Dewatering

32. Monney, I., Odai, S.N., Buamah, R., **Awuah, E.** and Nyenje, P.M. (2013), “Environmental impacts of wastewater from urban slums: case study - Old Fadama, Accra”, *International Journal of Development and Sustainability*, Vol. 2 No. 2.
33. Gyasi S.F, **E. Awuah**, J.A. Larbi, G.A. Kuffuor & O.O. Afriyie (2012) Clinical, haematological and histopathological responses to arsenic toxicity in ICR mice using arsenic levels synonymous to Buruli Ulcer endemic communities in the Amansie West District of Ghana. *European Journal of Experimental Biology*, 2012, 2 (3):683-689.
34. Gyasi S.F, **E. Awuah**, J.A. Larbi, G.A. Kuffuor (2012) Arsenic in water and soil: A possible contributory factor to *M. ulcerans* Infection in Buruli Ulcer Endemic Communities. *Asian Journal of Biological Sciences*.
35. Gyasi S.F, **E. Awuah**, J.A. Larbi, Y.A. Debrah & N.Y. Awua-Boateng (2012) Temporal relationships of environmental arsenic and *M. ulcerans* infections in the Amansie West District of Ghana (Pharmacologia, UK)/DOI: 10.5567/pharmacologia.2013.320.326
36. Gyasi S.F, **E. Awuah**, J.A. Larbi, G.A. Kuffuor & O.O. Afriyie (2012) Susceptibility of arsenic exposed ICR mice to the development of Buruli Ulcer in the Amansie West District of Ghana. (Pharmacologia, UK)/DOI: 10.5567/pharmacologia.2013.264
37. Nana O. B. Ackerson and **Esi Awuah** (2012) Microbial Risk Assessment of Urban Agriculture farming: A case study on Kwame Nkrumah University of Science and Technology Campus. *International Journal of Science and Technology* Vol. No 3 March 2012 pp.118 – 12.
38. Gyasi S.F, **E. Awuah** & J.A. Larbi (2011) Association of perceived risk factors to the development of Buruli Ulcer in the Amansie West Districts, *Asian Journal of Biological Sciences*. 4 (6): 483-497.
39. Tetteh I. K., **Awuah, E** and Frempong E. (2011). An Empirical perspective on Environmental Antecedents: part I - Analysis of the environmental quality of three riparian communities associated with two dams in Kumasi, Ghana. *Environmental Research Journal*, Vol. 5 Issue 1, p1 – 26.
40. Martha Ansah, **Esi Awuah**, Sampson Oduro-Kwarteng and Nana O.B. Ackerson (2011). The use of natural system for the treatment of greywater: A case study of Kpeshie Lagoon, Accra, Ghana *International Journal of Water Resources and Environmental Engineering* Vol. 3(11), pp. 238-250.

41. O. Cofie, A. Adeoti, F. Nkansah Boadu and **E. Awuah** (2010). Farmers perception and economic benefits of excreta use in Southern Ghana. *Journal of Resources, Conservation and recycling* Vol. 55 issue 2 pp.161 – 166.
42. Nana O.B Ackerson and **E. Awuah** (2010). Urban agriculture practices and Health problems among farmers operating on a university campus Kumasi. *Journal of Field Actions (FACTS Report) Special Issue 1*
43. **Awuah E**, Nyarko KB, Owusu PA and Osei Bonsu K (2009). Small towns water quality. *Desalination* 248 (1-3) 453-459
44. **Awuah E**, Morris RT, Owusu PA, Sundell R, and Lindstrom (2009). Evaluation of simple arsenic removal from domestic water supplies in rural communities. *Desalination* 248 (1-3) 42-47.
45. Nyarko KB, **Awuah E**, and Ofori D (2009). Local initiative in community water supply: Case study in Ashanti Region, Ghana *Desalination* 248 (2009) 450-457.
46. **Awuah E**, Nyarko KB, and Owusu PA (2009). Water and sanitation in Ghana. *Desalination* 248 (2009) 460-467.
47. Schafer AI, Rossita, HMA, Owusu PA, Richards BS, and **Awuah E** (2009). Physico-chemical water quality in Ghana for water supply technology implementation. *Desalination* 248 (1-3) 193-203.
48. Coffie O, and **Awuah E**. (2008). Technological and institutional innovation on irrigated urban agriculture in Accra, Ghana. *Urban Agriculture Magazine* **20** :14-16.
49. Odai S N, Mensah E, Sipitey D, Shoji R, and **Awuah E** (2008). Heavy metals uptake by vegetables cultivated on urban waste Dumpsites *Journal of Environmental Toxicology* 2: 92-99.
50. Agbottah S, **Awuah E**, Cofie O, and Montange A (2007). Anerobic treatment of percolate from faecal sludge. *Journal of the Ghana Institution of Engineers* Vol. 5 (1&2): 25-30
51. **Awuah E**, Lubberding HJ, and Gijzen HJ (2007). Effect of Protozoa on Faecal Bacteria Removal in Macrophyte and Algal Ponds. *Journal of Engineering Technology*1: 43-53.

52. Wilson A, Anyemedu FOK, Oduro Kwarteng S, and **Awuah E** (2006). Management of Medical Waste from Teaching Hospitals in Ghana. *Journal of Ghana Institution of Engineers* 4: 67-75.
53. Cofie O, Agbottah S, Strauss M, Esseku, Montangero A, **Awuah E**, and Kone, D (2006). Solid-liquid separation of faecal sludge using drying beds in Ghana: implications for nutrient recycling in urban agriculture. *Water Research* 40: 75-82.
54. Tetteh IK, **Awuah E**, and Frempong E (2006). Post-Project Analysis: The use of a network diagram for environmental evaluation of the Barekese Dam, in Kumasi, Ghana. *Environmental Modelling and Assessment* 11: 235-242 (**One of the ten best scientific Papers for the year award**)
55. **Awuah E**, Oduro- Kwarteng S, Lubberding HJ, and Gijzen HJ (2005). Hydraulic performance of water lettuce, duckweed and algal-based stabilisation ponds. *Engineering Review* 1: 8-16.
56. Tetteh IK, **Awuah E**, and Frempong E. (2004). Development of a weighting system for use in environmental health impact assessment associated with water impoundment projects in Ghana and its application. *Journal of Ghana Science Association* 6: 59-70.
57. Tetteh IK, Frempong E, and **Awuah E** (2004). An analysis of the environmental health impact of the Barekese Dam in Kumasi Ghana. *Journal of Environmental Management* 72: 189-194.
58. **Awuah E**, Darteh B, and Sakyi P (2004). Women engaged in charcoal production; their environment and health. *Energy Review* May-July 54-62.
59. **Awuah E**, Oppong-Peprah M, Lubberding HJ, and Gijzen HJ (2004). Comparative performance studies of macrophyte and algal-based stabilisation ponds. *J. Toxicol. Environ. Health* 67 (Part A)1-13.
60. **Awuah E**, Asante K, Lubberding HJ, and Gijzen HJ (2002). Effect of pH on enterococci removal in *Pistia*, duckweed and algal-based stabilization ponds for domestic wastewater treatment. *Journal of Water Science and Technology* 45(1): 67-74.
61. **Awuah E**, Asante, K, Anohene F, Lubberding HJ, and Gijzen HJ (2001). Environmental conditions and pathogen removal in macrophyte and algal-based wastewater treatment systems. *Journal of Water Science and Technology* 44 (6) 11-18.
62. **Awuah E**, Nkrumah E, and Monney JG (1996). The performance of Asokwa waste stabilization ponds and the condition of other sewage treatment plants in Ghana, *University of Science and Technology Journal of Science and Technology*. 16 (1 & 2) Feb/June.

63. **Awuah E**, and Awuah RT (1994). Enhancement of Sawdust Degradation with Chicken Droppings and the Potential Utility of the Degraded Product for Growing Tomato (*Lycopersicon esculentum* L.)," *Journal of Resource Management and Technology*, **22** (1).
64. **Awuah E**. (1993). "Plight of Urban Streams", *TNC Newsletter*, Vol. 5, September.
65. **Awuah E** (1992). "The Environment our common Future. Techpoint. *Journal of the University of Science and Technology*, **12** (3): 1.

13.3 Conference and Workshop Papers

1. Dartey B, Funke O, Rachid Sally L, and **Awuah E** (2010). Providing a resilient framework for stakeholder engagement through learning alliance: The case of SWITCH learning alliance platform approach in Sub Saharan Africa. IWA Cities of the Future Conference Boston MA USA.
2. Anna Odeh Agodzo and **Esi Awuah** (2010). Some heavy metal levels in drinking water and social characteristics in Buruli ulcer endemic and non communities in the Amansie West District. TWOWS General Meeting Beijing, China, July 2010.
3. **Awuah E**. Afealets DG, Lubberding HJ and Gijzen HJ (2010). Comparative performance studies of macrophyte and algal based treatment system in medium strength sewage. Islamabad Pakistan September 2010
4. Duncan E. **Awuah E**. Duodo and Ackerson NOB. (2010). The potential of natural wetland to treat grey water in Cape Coast. Desalination conference Tel Aviv Israel October 2010
5. **Awuah E**. Sustainable water and sanitation delivery in West Africa. Background Paper for the West Africa Symposium on hygiene and sanitation 2-5th November 2009. Errata Hotel, Accra.
6. Antwi P, **Awuah E**, and Oduro Kwarteng S. Faecal Sludge management: Case study of Medina. West Africa Symposium on Hygiene and Sanitation. 2-5th November 2009. Errata Hotel, Accra.
7. Nsiah Gyabaa D, **Awuah E**, and Oduro Kwarteng S. Sanitation and hygienic practices in Tano South District Schools in Ghana. West Africa Symposium on Hygiene and Sanitation. 2-5th November 2009 Erata Hotel Accra.
8. Ansah, M, **Awuah E**, and Ackerson NOB. The use of natural systems for the treatment of grey water: The treatment of Kpeshie Lagoon, Accra. Ghana IFS women in Science Conference October, 2009 Kampala Uganda.

9. Ackerson NOB, and **Awuah E.** Microbial Risk Assessment of Urban Agricultural Farming: A Case Study on Kwame Nkrumah University of Science and Technology Campus, Kumasi, Ghana. CERR July 2009, Capital View Hotel, Koforidua.
10. Laryea L, **Awuah E.**, Anakwa AO, and Donkor E. Assessment of the faecal sludge management system within the coastal Keta-Anloga Coastal stretch CERR July 2009, Capital View Hotel, Koforidua.
11. Kuffour AR, **Awuah E.**, Anyemedu FOK, Strauss M, Kone D, and Coffie O. Effect of using different particle sizes of sand as filter media for dewatering faecal sludge In: Richard B and Schaefer AI edited. Water Sanitation in International Development and Disaster Relief Workshop Proceedings. May 2008 pp 347-354.
12. Nyarko KB, **Awuah E.**, and Ofori D. Local Initiative in Community water supply: case study in Ashanti Region Ghana. In: Richard B and Schaefer AI (ed). Water Sanitation in International Development and Disaster Relief Workshop Proceedings. May 2008. pp. 775-781.
13. **Awuah E.**, and Abrokwa A. Performance of UASB reactor at James Town Mudor. WEDC Conference Accra. April 2008.
14. **Awuah E.**, Sanjok EAM, and Donkor E. Management of conventional sewerage system: case study of Tema sewerage system presented at WDEC conference, Accra April 2008. In WEDC conference proceedings Reviewed paper.
15. **Awuah E.**, Aime M, and Oduro Kwarteng S (2007). Grey water treatment using a natural wetland in Ghana. 2nd SWITCH Scientific Meeting, Tel-Aviv, Israel.
16. **Awuah E.**, Niyonzima S and Kwarteng SO (2007). Grey water treatment using constructed wetlands in Ghana. 2nd SWITCH Scientific Meeting, Tel-Aviv, Israel.
17. **Awuah E.**, Nimo F, Oppong Peprah M., and Badu E. Environmental and health impacts associated with metal workers in Kumasi. In Proceedings of Africa Round Table Conference on Micro Financing in Africa. ACP Luxemburg April 2005.
18. **Awuah E.** Environmental impacts associated with on site toilet technologies in Ghana with emphasis on KVIP latrines. In proceedings of Toilet Technology Summit, CWSA, June 2005 at Crystal Rose Kumasi.
19. **Awuah E.**, Anipa H, and Adjei A. Water quality analysis of sachet water on the market in the Kumasi metropolis and environs. In Proceedings of SERR III Busua, Ghana, September, 2003.
20. **Awuah E.**, Lubberding HJ, and Gijzen HJ (2003). The role of attachment in pathogen removal in macrophyte and algal-based wastewater treatment systems Festival de L'OH Paris,

21. **Awuah E**, Lubberding HJ and Gijzen HJ (2002). Effect of pH fluctuations on pathogen removal in domestic wastewater In: Proceedings of SERR II Elmina Ghana.
22. **Awuah E** and Kuffour AR (2002). Wastewater characteristics, its sources and environmental impacts. In Handout materials of i-learning seminar GIMPA Accra. September
23. **Awuah E**, Kuffour AR, and Gijzen HJ (2001). Characterisation and management of domestic wastewater of two locations in Kumasi. In Workshop Proceedings, SERR 1.
24. **Awuah E**, Asante K, Lubberding HJ and Gijzen HJ (2000). Effect of pH on pathogens removal in domestic wastewater In workshop proceedings of Aqua 2000, Cali, Colombia
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26. **Awuah E** Assessment of risk associated with the consumption of aflatoxin-contaminated groundnut in Ghana. In workshop proceedings of National Workshop on Groundnut and Groundnut Aflatoxins. KNUST, Kumasi. September 1999.
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28. **Awuah E**. Environmental impacts of agricultural activities. Paper presented at the USAID Workshop for Agricultural Engineers from the Ministry of Food Agriculture Kumasi, November 1997.
29. **Awuah E**. Basic environmental concepts with emphasis on the environmental issues on the African continent. Paper presented at USAID EIA training for USAID grantees in Africa. Tamale, Ghana. December 1997.
30. **Awuah E**. Environmental considerations in water and sanitation development projects in the Guinea Savannah regions of Ghana. Paper presented at USAID EIA training for grantees. Tamale, Ghana. December 1997.
31. **Awuah E**. Improvement of Bacteriological Quality of Domestic Water in Kumasi and Environs by Solar Radiation. Fourth National Energy Symposium, Kumasi, Ghana, March 1989.
32. **Awuah E**, and Adjei Doku. Community based Training for artisans and Women in Environmental Health and Hygiene education and Ventilated Improved Pit Toilet construction in Anloga (A Suburb in Kumasi). Proceeding Workshop for ADF Grantees Entebbe, Uganda, August, 1995.

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38. **Awuah E.** (2007). Environmental Assessment report for Gomoa Dago Hotel
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40. **Awuah E,** Buamah R, and Nyarko-Biritwum. K (2002). Environmental management plans for Nnuro Kente, Kumasi. EPA Kumasi
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45. **Awuah E.** (2001). Environmental Assessment Report for Industrial Chemical Laboratories (ICL) EPA Accra
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47. **Awuah E,** Anohene F, Oppong-Peprah M, and Nyarko-Biritwum K (2000). Environmental and technological impacts of macrophyte based wastewater treatment systems at Ejura. GTZ Accra

13.5 Others

48. Isaac K Tetteh, **Esi Awuah** and Emmanuel Frempong (2009). **Book chapter** in Air, Water and Soil Science Technology Series. Chapter 17: A retrospective Environmental analysis, modelling and prediction of impacts in connection with infrastructural developments in sub-Saharan Africa: A case study of two dams in Kumasi, Ghana. Title of Book: Environmental and Regional air pollution Dean Gallo and Richard Mancini Editors Nova Science Publishers, Inc. New York ISBN 978-1 60876 553-9 (E book) 516p.
49. **Awuah E.** (2009). Guidelines for successful studies drafted for publication 40pp.
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51. **Awuah E.**, Amaning Agyei K, and Tsiboe M. (Ed). Proceedings of the First Presidential Debate on Sanitation in Ghana. Great Hall, KNUST Kumasi.2009. KNUST Kumasi 80 pp.
52. **Awuah E.** (2006). Hygiene education manual for School Hygiene education Project Co-ordinators. 150 pp.
53. **Awuah E.** (2007). Hygiene education manual for Water and sanitation Boards 80p.
54. **Awuah E.**, Opong Pephrah, M., and Duma-Pratt E (2004). Manual for community water and sanitation delivery in small towns. 23 pp.
55. **Awuah E.**, Mensah T, and Veenstra S [major contributors] (2001). Training materials for liquid waste management, handling, treatment, reuse and disposal of faecal sludge. KNUST.
56. **Awuah E.** (1999). Pathogen removal mechanisms in macrophyte and algal-based wastewater stabilisation ponds PhD proposal submitted to IHE, Delft, Netherlands.
57. **Awuah E.** (1999). Women's role in portable water delivery in the next millennium. Paper presented at the Ghana Water and Sewerage Co-operation Ladies Associated symposium at GNAT Hall, Kumasi, and May, 1999
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59. **Awuah E** (1995). Manual for Health and Hygiene Education for Women and Artisans in Anloga (A suburb in Kumasi).

60. **Awuah E.** and Okereke VI Editors, (1994). Proceedings of the First Workshop on Environmental Impact Assessment, Accra, Ghana, July.

13.6 Conference Abstracts

61. **Awuah E.** Creating an effective synergy between Engineering and innovation, youth employment, entrepreneurship development and inclusive growth. **COVIDSET** Gaborone, Botswana November 2013.
62. **Awuah, E.** Effect of Climate change on the MDG goals for water and sanitation delivery. Second African regional Conference for the Organization for Women in Science for the Developing World. UENR Sunyani, October, 2013.
63. **Awuah E.** Research Management at the Kwame Nkrumah University of Science and Technology INORMS Conference in Johannesburg South Africa April 2010
64. **Awuah E.** and Addy S. Indigenous methods of drinking water treatment TWOWS Scientific Meeting June Nanjing China 2010
65. **Awuah E.** and Asante K. Rainwater harvesting practices among farmers in Kumasi and environs CGIAR Conference in Rio, Brazil October 2006
66. **Awuah E.** Odai SN, Nyarko-Biritwum K, and Kpordze CSK, Capacity building in water and sanitation sector in Ghana CGIAR Conference in Rio, October 2006
67. **Awuah E.** Comparative performance studies on water lettuce, duckweed and algal-based wastewater stabilization ponds. IWA World Water Conference at Melbourne Australia, 2002.
68. **Awuah E.** Pollution load of urban streams and their faecal coliform die-off rates in Kumasi, International Conference on Environment and Development in Africa, Accra, Ghana. 1995
69. **Awuah E.** The sanitary condition and faecal pollution levels of some Primary School Grounds in Kumasi and Environs, WEDC, Accra, Ghana, August 1993
70. **Awuah E.** Onsite refuse disposal system for a clean environment 19th International Conference on Solid Waste Management and Secondary Materials, Philadelphia, Pennsylvania, U.S.A., November 1993
71. **Awuah E.** Moringa Seed as a Coagulant and its Effect on Cyclops (the intermediate host of guinea worm), WEDEC, Accra, Ghana, August 1993.
72. **Awuah E.** Impact Assessment of Women Engaged in Palm Kernel Oil Extraction: Their Health and Environment, Thirteenth International Conference of International Association of Impact Assessment, Shanghai, China, June 1993.

13.7 Posters

1. Ofosu E, **Awuah E.** and Annor FO. (2009). Effects of Reservoir Characteristics on Malaria and its vector Abundance: A Case Study of the Bongo District of Ghana. *Geophysical Research* Vol. 2 EGU2009-8670, 2009 EGU General Assembly
2. **Esi Awuah** Prince Antwi Agyei. (2009). Africa SNOWS (Scientist Networked for Outcomes from Water and Sanitation). Research Capacity strengthening in African Institutions. Governance structure.
3. **Awuah E.**, Morris T, Owusu PA, Sundell R, and Lindstrom J (2008). Evaluation of simple methods of Arsenic removal from Domestic Water Supply in Rural communities.
4. **Awuah E.**, Nyarko KB, Owusu PA, and Osei Bonsu K (2008). Small Towns Water Quality.
5. Schafer AI, Rossita, HMA, Owusu PA, Richards BS, and **Awuah E.** (2009). Physico-chemical water quality in Ghana for water supply technology implementation.
6. Kuffour A. R, **Awuah E.**, Anyemedu, FOK, Strauss M, Kone D and Coffie O. (2008). Effect of using different particle sizes of sand as filter media for dewatering faecal sludge.
7. **Awuah E.**, Aime M and Oduro-Kwarteng S (2007). The potential of Natural wetlands in treating grey water - Case study: KNUST Campus
8. **Awuah E.**, Niyonzima S and Oduro-Kwarteng S. (2007). Performance of constructed wetlands in grey water treatment.
9. **Awuah E.**, Oppong Peprah M, Lubberding HJ, and Gijzen HJ (2002). Performance of Stabilization ponds with *Pistia*, duckweed and algae in low strength sewage.
10. **Awuah E.**, Anohene F, Asante K, Lubberding HJ, and Gijzen HJ (2000). Environmental conditions and pathogen removal in macrophyte and algal based domestic wastewater treatment systems.

14.0 VIDEO DOCUMENTARIES MADE

1. Environmental and Health risks of Metal Workers at Suame Magazine in Kumasi, Ghana.

15.0 EXTRA CURRICULAR ACTIVITIES

Composer of the University of Energy and Natural Resources' Anthem

Composer of University of Health and Allied Science's Anthem

Hobbies: music and walking.

Gospel album titled 'Yesu Ko ma me' produced in 1996

16.0 REFEREES

Available on request