The Noguchi Memorial Institute for Medical Research (NMIMR), has the mission to conduct research into infectious and non-infectious diseases, build capacity through training and provide specialized diagnosis and monitoring services in support of public health. The “Noguchi Newsletter” is a quarterly publication of the institute that provides important information to stakeholders including staff of the institute, the University of Ghana community, partner institutions, industry, donors, development partners, policy makers, students, interns and the global community at large.

We present a snapshot of the research projects, training programs and specialized diagnostics conducted in the Institute's research departments. The NMIMR continues to perform its role as a regional reference laboratory for West Africa. The Institute houses several national and regional centres of excellence, which are performing critical research, training and surveillance activities in advancement of global health security. I am happy to acknowledge the key role played by the WHO accredited polio reference laboratory in the Institute in the detection of vaccine derived polio virus strain in Ghana, which have raised the alert to help keep the country polio-free. This finding and the response measures taken by the WHO and stakeholders has raised expectations for a more successful polio eradication programme worldwide.

In November this year (2019), the NMIMR will bring its 40th anniversary celebration to a climax with an international conference under the theme: Meeting Global Health Challenges: 40 years of innovative research at Noguchi. This issue of the newsletter has highlighted some of the activities being rolled out to raise awareness, educate and build resilience to both infectious and non-infectious diseases in the communities. We commissioned our advanced research centre (built with Japanese grant aid) and we are enhancing our role in monitoring, surveillance and provision of specialized diagnostics as a strategy to strengthen the Institute's contribution to achieving Goal 3 of the Sustainable Development Goals (SDGs) in Ghana and the West African sub-region. The continuous achievement of goals set by our mandate would not be possible without the support of our partners and stakeholders and we wish to express our sincere thanks to all our stakeholders, donors, collaborators and research partners.
ABOUT NMIMR
The Noguchi Memorial Institute for Medical Research (NMIMR), set up in 1979 as a semi-autonomous institute of the University of Ghana, is the leading biomedical research facility in Ghana. The Institute is the result of joint efforts by Prof. E. O. Easmon, former Dean of the University of Ghana Medical School, Prof. Kenji Honda of Fukushima Medical School in Japan and the Japan International Co-operation Agency (JICA). It was built by the Government of Japan and donated to the Government and people of Ghana in honour of the distinguished Japanese scientist Dr. Hideyo Noguchi, who researched into yellow fever in Ghana and died from the disease in the country in 1928.

VISION STATEMENT
To be a leading global medical research centre.

MISSION STATEMENT
Improving the health and wellbeing of Ghanaians and mankind through focused and relevant quality biomedical research, human resource development and support of national public health activities.

MANDATES
The overall mandate of the Institute is to conduct research into diseases of public health importance, train postgraduate students in biomedical sciences and support the public health programmes of the Ministry of Health and Ghana Health Service. Specifically this involves:
1. Conducting research into communicable and non-communicable diseases;
2. Providing training opportunities in biomedical research for undergraduate and postgraduate students;
3. Providing high end laboratory diagnostic and monitoring and surveillance services in support of national public health programmes.

EXECUTING THE MANDATES
The Institute is headed by a Director appointed by the University of Ghana Council. The Director exercises overall responsibility for both the scientific and administrative functions of the Institute. The Institute has well qualified scientists with expertise in diverse areas of health and social research who head various programmes, and an array of technicians, pharmacists etc. supporting the work.

VALUE STATEMENT
In order to generate quality data to guide evidence-based policies, the Institute is committed to:
• Conducting quality research
• Ensuring integrity of research data
• Upholding high ethical standards in research
The Noguchi Advanced Research laboratory (ARL) was officially opened on 26th March, 2019 with a grand ceremony held at the forecourt of the new building, following completion of construction in the last quarter of 2018. The ARL was built and furnished with state-of-the-art equipment through a $20 million grant from the Japanese Government. It is the latest in a long list of essential research and conferencing infrastructure that the Japanese Government has graciously provided to the Government and people of Ghana in honour of the great Japanese scientist, Dr. Hideyo Noguchi.

As part of his welcome address, the Director of the Institute, Prof. Abraham Kwabena Anang, gave a brief history of the Institute and paid tribute to the founding fathers of the Institute, Prof. E. O. Easmon and Prof. Kenji Honda for their foresight and vision which birthed NMIMR. He also expressed gratitude to retired staff for their commitment and dedication to the advancement of the mandate of the Institute. Prof. Anang described the Institute as a leading biomedical research institute and a forerunner in the fight against emerging and re-emerging diseases in the West African sub-region. He proceeded to outline some of the landmark achievements of the Institute that have collectively contributed to NMIMR achieving the status of a World Health Organization (WHO)/regional/national reference laboratory for pathogens/diseases including HIV/AIDs, Rotavirus, Influenza, Tuberculosis, Polio and Buruli ulcer. NMIMR has also been identified as a Regional Mirror bio bank for West Africa by the West African Health organization. Prof. Anang further stated that the addition of the ARL to NMIMR’s facilities, positions the Institute to deliver state-of-the-art technologies in biomedical research and achieve its three-fold mandate of conducting research in infectious and non-infectious diseases, capacity building through training of the next generation of scientists and providing diagnostics and monitoring services in support of public health. He also stated that the ARL will strengthen the capacity of the institute as a key player in national, regional and global surveillance to prevent, detect, diagnose and monitor disease outbreaks. Additionally, the ARL will provide the resources for promoting the mission of the institute as a centre of excellence for advancing global health security. In rounding up, Prof. Anang mentioned that the Institute is making efforts to leverage celebration of the 40th Anniversary of its establishment to build innovative partnerships and mobilize the human and material resources available to create new opportunities. He also outlined the plans of the Institute in controlling and eradicating yellow fever through the “Consultative Group” which was subsequently inaugurated in May 2019. Prof. Anang also revealed plans for the establishment of the Hideyo Noguchi Together Endowment Fund.
The Chief Representative of the Japanese International Cooperation Agency (JICA) in Ghana, Mr. Hirofumi Hoshi, expressed JICA's excitement at seeing the facility completed and indicated that this facility should impact positively on the healthcare system in Ghana. Mr. Hoshi emphasized the key role that NMIMR has played in training laboratory technicians across the West African sub-region and revealed plans of a new technical cooperation project to strengthen the safety and quality management capacity of the Institute. He briefly recounted the collaborations between JICA and NMIMR, which started with capacity-building but gradually transformed to collaborative research and infrastructure support.

Vice-Chancellor of the University of Ghana, Prof. Ebenezer Oduro Owusu, praised the Japanese Government for its continued support for capacity building at NMIMR, and in other sectors of the country. He stated that the ARL provides a good foundation for conducting excellent biomedical research in support of public health, and on behalf of the University of Ghana, pledged support for the management and maintenance of the facility. He urged all Ghanaians to emulate the integrity and honesty that is characteristic of the Japanese people and stated that the ARL facility teaches us all the need to instill the principles of value for money and time management.
The ARL was unveiled by Hon. Yaw Osafo-Maafo, Senior Minister, who was representing Nana Addo Dankwah Akufo-Addo, President of the Republic. Hon. Osafo-Maafo expressed the gratitude of the Ghana Government to Japan for it’s long-standing support for Ghana’s health sector, transportation, energy, agriculture and human resource development. These have been achieved through Japanese initiatives and programmes under the African Business Education (ABE) Initiative, Overseas Development Assistance Scheme, Japanese International Cooperation Agency (JICA) and the Japanese Overseas Cooperation Volunteers (JOCV). He expressed the relevance of the new facility for the advancement and promotion of health research and commended the Institute for the significant role it has played in the detection and diagnosis of such important pathogens as HIV/AIDS, Malaria, Pandemic Flu, Yellow fever and Ebola Virus Disease. He further stated that NMIMR is a national asset that the country is very proud of and addition of the ARL to the institute’s facilities should propel it to become a global centre of excellence. Hon. Osafo-Maafo declared the Ghana government commitment to the Institute’s advancement and pledged government’s support for maintenance of the ARL as well as for the establishment of the Noguchi Endowment Fund.

Also present at the ceremony were Prof. Kwesi Yankah, Minister of State for Tertiary Education, Mrs. Mary Chinery-Hesse, Chancellor of the University, Prof. Yaw Twumasi, Chairman of the University Council, Dr. Owen Kaluwa, the WHO Country Representative as well as Provosts, Deans and Directors of various constituents of the University of Ghana. Also in attendance were Mrs. Sandra Owusu Ahenkorah, Municipal Chief Executive for Ayawaso West Municipal Assembly, Hon. Lydia Seyram Alhassan, Member of Parliament for the Ayawaso West Wuogon Constituency, representatives from JICA, staff of the Japanese Embassy, representatives from Shimizu Corporation, the construction consultants, representatives from Nikkon Sekkei, consultants for equipment supply, and other members of the university community and the general public.
A section of NMIMR staff at the event

NMIMR past Directors and Fellows

Musical Interlude (Seperewa)

The Police Band at the event
William Ampofo is Associate Professor and Head of the Virology Department, Noguchi Memorial Institute for Medical Research (NMIMR), College of Health Sciences, University of Ghana, Legon, Accra, Ghana. His research interests include molecular and serological investigations of viruses, prevention of viral infections, anti-viral therapy and viral disease burden. Much of Prof Ampofo's work is related to basic virology, epidemiology and prevention of viral infections and capacity building of laboratory medicine practitioners. His career milestones include the laboratory discovery of the first Ghanaian case of HIV in 1986, oversight of initial avian influenza investigations in poultry in Ghana and the senior investigator role in the first phase 3 clinical trial in Ghana of a microbicide to prevent HIV infections in women. He has participated in various studies and has over 100 publications covering medical science. Prof. Ampofo is the focal person for the national influenza center and the national HIV Genotyping laboratory and coordinates participation of the NMIMR in the emerging dangerous pathogens laboratory network for the World Health Organization (WHO) African Region. He has worked on various national committees as a virologist and his current efforts include utilization of advanced molecular diagnostic applications such as next generation sequencing for disease surveillance in Ghana. He has served on temporary assignments throughout Africa with the WHO, the Commonwealth Secretariat Health Division, US Department of Defense, German International Development Agency and the US Agency for International Development. Prof Ampofo has represented Africa on WHO advisory groups for influenza vaccine production, immunization and pandemic influenza preparedness. He was Advisor of the, WHO International Health Regulations Emergency Committee on Ebola from 2014 to 2016. He recently coordinated UNDP supported capacity strengthening of five ECOWAS countries to monitor diseases at border districts resulting in improved abilities to rapidly identify diseases of public health importance and outbreak potential. He also helped in the establishment of zoonotic and public health laboratory services at Njala University in Sierra Leone for effective investigations of priority zoonotic viral diseases Post- Ebola Resilience. He is currently a member of the Ghana Food and Drugs Authority Technical Advisory Committee on Vaccines and Biologicals; Chair - African Vaccine Manufacturing Initiative; Senior Editor - African Journal for Laboratory Medicine; Ghana Ambassador - African Society for Laboratory Medicine and a member of the new international taskforce for the Influenza Vaccine Roadmap.
Awards Segment

NAMRU 3 Awards Collaborating Scientists
On 11th April, 2019 the Commanding Officer of the Naval Medical Research Unit Number Three (NAMRU) Captain Andrew Francis Vaunghn, presented awards to collaborating scientists at Noguchi Memorial Institute for Medical Research (NMIMR). The awards were presented to NMIMR Fellows who collaborate with NAMRU 3 on NAMRU 3 funded projects as acknowledgement of the manuscripts that have come out of the NAMRU/NMIMR collaboration. The Fellows who were honored with medals in this category were: Prof. William Ampofo, Dr. Samuel Dadzie, Prof. Neils Quashie, Dr Nancy Quashie, Dr Kofi Bonney and Dr Asamoah Kusi.

Individual scientists including Mrs Naiki Attram, Dr. Shirley-Nimo Paintsil, Mrs Selassie Kumordjie Antwi, Mr Mba-Tihssomah Mosore and Mr Eric Behene were also acknowledged with medals as well as a citation, for supporting in different capacities and various ways for all research activities funded by NAMRU 3.

Scientists from NMIMR receiving awards from captain Vaunghn

Scientst from the NAMRU 3 unit being awarded by captain Vaunghn
African Research Network for Neglected Tropical Disease (ARNTD) Award supported by the USAID and UK

Dr. Kwadwo K. Frempong, a Principal Research Assistant at the Parasitology Department has received the small grant (Junior Award Category; Ref: SGP II/0114/089) by ARNTD

Mrs. Naa Adjeley Frempong a post graduate research student with the Parasitology Department has received the ARNTD Award. The small grant (Junior award category; Ref: SGP II/0114/071) from the ARNTD

Ms. Millicent Opoku from the Parasitology Department was selected to participate in the maiden edition of the Global Challenges Research Fund (GCRF) exchange programme organized at the Wellcome Centre for Integrative Parasitology (WCIP).

Mr. Mark Tetteh-Tsifoanya received a bursary to attend a 3-day training conference on Innovative drug development at the University of Dundee, UK from May 12-15 2019, organized by the Welcome Centre for Anti-Infectives Research, Setting Our Sights On Infectious Diseases.

Dr. Helena Lamptey has received “Building a New Generation of Academics in Africa” (BANGA-Africa) Post-Doctoral Fellowship Award.

The Department of Parasitology held its annual departmental retreat on Friday 11th January 2019 and awarded staff who have performed excellently. This year’s retreat was held at The Signature Beach Resort at Ningo in the Greater Accra Region.
Best Laboratory – Room 249 (Immunoparasitology Lab)
Best Technical Staff – Mrs. Yvonne Ashong
Best National Service Personnel - Nathaniel Frimpong Boateng
Best Research Assistant – Dr. Charles Quaye
Best Research Fellow – Dr. Dziedzom de Souza
Research Corner

As per the core mandates of the Institute, the departments continued to carry out various research activities under the period of review. Below are some research activities selected from the departments:

Department of Animal Experimentation
• Developing an alternate anti-malarial from medicinal plants: Exemplifying the multi-target concept in malaria drug discovery.
  Funder: University of Ghana Research Fund (UGRF)
• The effect of fresh juice of Morinda citrifolia (Noni) on fertility in male SD rats
  Collaborator: Department of Pharmacology and Toxicology, School of Pharmacy, UG
• Anticonvulsant activity of an ethanolic extract of Cleome rutidosperma (Capparidaceae) in animal models of seizure.
  Collaborators: Department of Pharmacology and Toxicology, School of Pharmacy, UG

Department of Clinical Pathology
• In vitro investigation on antimalarial activity of medicinal plants.
  Collaborators: Department of Chemistry, UG, UGSOP and CPMR.
• Screening of Ghanaian medicinal plants for anticancer bioactive agents.
  Collaborator: Department of Chemistry, UG.

Department of Electron Microscopy Histopathology
• A Phase 3 double-blind, randomized, active comparator-controlled, group-sequential, multinational trial to assess the safety, immunogenicity and efficacy of a trivalent P2-VP8 subunit rotavirus vaccine in prevention of severe rotavirus gastroenteritis in healthy infants.
  Funder: Bill and Melinda Gates Foundation; Sponsor: PATH.
• Etiological studies of Intussusception in Ghana.
  Funder: Center for Disease Control (CDC)
• Development of bacteriophage cocktails as disease biocontrol agents for improved aquaculture productivity, food and nutrition safety in Ghana and Uganda.
  Funder: The African Union Commission

Department of Epidemiology
• Tracking malaria disease prevalence in 31 sentinel sites.
  Funder: Global fund

Department of Nutrition
• To investigate the effect of composite nutrients powder (CNP) consumption on nutritional anaemia and under nutrition in anaemic young school children.
  Collaborators: Parasitology Department, NMIMR; Public Health Department of University of Health and Allied Sciences, Hohoe; Department of Nutrition and Food Science, University of Ghana, Legon.
• Characterization and effect of Rhynchosporus ferrugineus fortified cereal foods on iron status of Ghanaian children.

Department of Immunology
• Novel malaria multi-epitope vaccine design.
  Collaborators: Naval Medical Research Center, USA and Walter Reed Army Institute for Research.
  Funder: Congressionally Directed Medical Research Program
• Evaluation of new Highly Sensitive Malaria RDT
  Funder: Abbott
The Institute organized a symposium on 29th May 2019 as part of activities to mark the 40th Anniversary Celebration of the Institute. The event highlighted plans of the NMIMR to launch a Consultative Group to develop a road map to push the agenda for Yellow Fever control, towards elimination and eradication.

The Director, Prof. Abraham Kwabena Anang at the Symposium pointed out that the Institute was built by the Government of Japan in honour of Dr. Hideyo Noguchi, a renowned Japanese Scientist who came to Ghana in 1927, the then Gold Coast to research into a devastating Yellow Fever outbreak in West Africa, but unfortunately, he died of the same disease in 1928. As NMIMR celebrates 40 years since its establishment, the Institute is positioned to work with partners to develop a plan for yellow fever control and potential elimination towards eradication. Through the initiative, a “Consultative Group”, made up of a team of eminent infectious disease scientists, policy makers and representatives from international health and development organizations will be set up. This group will champion advocacy and consensus building for a new community-based partnership approach for Yellow Fever control and elimination towards eradication.

He further stated that the Institute will develop a Netted Ring, a simple tool to control the Aedes aegypti mosquitoes that spreads yellow fever. The tool, which is expected to be rolled out in November this year, was part of the Institute’s new initiative to completely eradicate yellow fever infections in Ghana.

Prof. Anang observed that yellow fever vaccination at child birth has helped to reduce the disease burden in Ghana, noting that, there were ongoing studies to reduce the vector population through the use of residual insecticide spraying. “Today, Yellow fever is not a big disease problem but we must not relent in our efforts; if we relax, we may have a big epidemic,” he said.

The Institute, intends to align more closely with the World Health Organisation (WHO) and the national efforts to eliminate Yellow fever.
Dr Franklin Asiedu-Bekoe, Head of Disease Surveillance at the Ghana Health Service (GHS) entreated the public to participate in yellow fever vaccination saying “mass prevention vaccination campaigns” had rapidly increased population immunity and protected susceptible older groups in some high-risk areas in the “Northern belt of the country”.

Dr Asiedu-Bekoe, explained that yellow fever cases are classified as suspected, probable and confirmed cases. The suspected case is characterized by acute onset of fever followed by jaundice within two weeks of onset of the first symptoms and the probable is a suspected case that has tested positive for yellow fever or epidemiologically linked to a confirmed case.

Yellow fever is an acute viral haemorrhagic disease transmitted by infected mosquitoes through bites. It is spread by a species of mosquito common to Africa and South America, and vaccination is recommended before traveling to these areas.

Mild symptoms of yellow fever include fever, headache, nausea and vomiting, while serious cases may cause fatal heart, liver and kidney conditions.

The Symposium was attended by policy makers, students, researchers, the Ghana Health Service (GHS) and the World Health Organization (WHO).
Event in Pictures
Launch of 40th Anniversary

Prof. Francis Dodoo, Pro VC Research Innovation and Development (RID) and Provost CHS

Relaunch of NMIMR News Letter

NMIMR hosts West African Network for TB, AIDS and Malaria (WANETAM) Retreat

Third Country Training Course on Enhancing Laboratory Skills for Infectious Disease for West African Countries Post Ebola. Dignitaries and participants

The US Global Malaria Coordinator, Dr. Kenneth Staley and the President's Malaria Initiative (PMI) team paid a courtesy visit to the Institute. The PMI leadership interacted with Research Fellows from the Institute who are part of the PMI.

2019 National Science and Math Quiz Contestants Visit to NMIMR
Health Quiz competition held by the Functional Immunogenetics project among basic schools in the Oyarifa Circuit.
Funder: Ministry of Foreign Affairs, Denmark
Quiz convenor: Mr. Frank Osei, Ghana Health Quiz Initiative

The International Director of Institute Pasteur:
Prof. Pierre-Marie Girard visit to the Institute.

HE. Tsutomu Himeno and Hon. Yaw Osafo Mafo cutting the tape to open the ARL

The Chairman and Chancellor of the University Council with other Dignitaries.

Tour of the Advanced Research Laboratories (ARL) led by the Director
Conferences and Seminars

Conference Attendance with Presentations
Department of Electron Microscopy & Histopathology
Prof. George E. Armah
- Center for Vaccine Innovation and Access (CVIA) 061 Investigators Meeting, Hyatt Regency in Rosebank, Johannesburg, South Africa on 29th-30th April, 2019.
- VIDA Investigators’ meeting, Bamako, Mali (PATH) 10th-11th April, 2019.
- Strategic Advisory Group of Experts (SAGE) on Immunization meeting, Geneva 2nd-4th April, 2019.
- Orientation Workshop on Rotavirus Vaccine Switch, Abidjan, Cote D’Ivoire (WHO) 25th March, 2019.

Dr. Susan Damanka
- Inception Workshop for three funded projects under the African Union Research Grants 2018 at the Imperial Botanical Beach Hotel, Entebbe, Uganda from 6th-9th March, 2019.
- Center for Vaccine Innovation and Access (CVIA) 061 Investigators Meeting, Hyatt Regency in Rosebank, Johannesburg, South Africa on 29th-30th April, 2019.

Professor George Armah and Dr. Susan Damanka
- participated in the Center for Vaccine Innovation and Access (CVIA), PATH (CVIA 061 Investigators Meeting in Johannesburg, South Africa on 29th-30th April, 2019.

Bacteriology Department
- Dr. Gloria Ivy Mensah gave an oral presentation during the plenary session of the 2019 DELTAS Africa Scientific Conference in Dakar-Senegal from 15th-17th July, 2019.

Upcoming Events
HIGHLIGHTS OF UPCOMING EVENTS

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Editorial Committee

Prof. Regina Appiah-Opong  
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Dr. Gloria Ivy Mensah  
Dr. Charles Quaye  
Mrs. Gloria Obeng-Benefo

Mr. John Gainsford  
Mrs. Dorcas Opai-Tetteh  
Mrs. Dora Asomani-Owusu  
Mr. Frederick Ofori Addo

Photo Credit: Mr. Isaac Hudson Odoi
NOGUCHI MEMORIAL INSTITUTE FOR MEDICAL RESEARCH (NMIMR)
College of Health Sciences, University of Ghana

International Research Conference
28—29 November, 2019
‘Sustaining Global Health Gains Through Partnerships in Biomedical Research’

SPEAKERS

Prof. Kweku Phiri
Department of Anatomy, Physiology and Embryology, UG

Dr. Chenru Liu
UNICEF, New York, USA

Dr. Robert Siris
University of Wisconsin, Madison, USA

Dejnaha Tewelde
Department of Biomedical Engineering, Addis Ababa University, Ethiopia

Prof. Jonathan Siles
Weill Cornell School of Medicine, New York, USA

Prof. Regina Appiah-Opong
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