The Noguchi Memorial Institute for Medical Research (NMIMR) has the mission to conduct research into infectious and noninfectious diseases, build capacity through training and provide specialized diagnostics and monitoring services in support of public health. The “Noguchi Newsletter” serves as 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.

This issue of the Noguchi Newsletter features research projects, training programs and some special events that have taken place in the Institute, including a series of activities to mark the 40th Anniversary. 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 has raised the alert to help keep the country polio-free! This finding and the response measures taken by the WHO and stakeholders have raised expectations for a more successful polio eradication programme worldwide.

In addition to the activities, we have provided a detailed list of all our collaborators and partners. We believe in innovative partnership. The continuous achievement of goals set by our mandate is not 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.
The 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. Odamten 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.

MANDATE
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 MANDATE
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
New Appointments

Dr. Susan Damanka has been appointed as the new Head of the Department of Electron Microscopy and Histopathology from August, 2019.

Susan Afua Damanka joined the Institute as an Assistant Laboratory Technician in 1983 and took advantage of the opportunities available in the Department and the Institute in general to study over the years. She holds Higher Diploma in Microbiology from Institute of Science Technology, London, MPhil and PhD degrees in Microbiology from University of Ghana. Her PhD work on Rotavirus led to the first detection of a rare OP354-like rotavirus subtype in Ghana. As a technician, Susan supported all the projects in the department. She has been involved in training and mentoring of subordinates, National Service Personnel, undergraduates and graduate students from the University of Ghana. Susan was also involved in training Senior Scientists and Technicians of the African Rotavirus Surveillance Network in rotavirus diagnosis, molecular characterization of enteric viruses, and electron microscopy techniques in the identification of viruses. She is the only female who can operate the Transmission Electron Microscope in Ghana.

Mr. Theodore Matey Ahuno, a Senior Assistant Registrar is the new Institute Administrator for Noguchi Memorial Institute for Medical Research (NMIMR). He succeeded Mr. Okyere Boateng from 1st August, 2019. He holds a Bachelor of Arts (BA) and Master of Public Administration (MPA) both from the University of Ghana. He joined the University in 2000, after serving a total of 20 years. Mr. Ahuno has served as an Administrator at the Institute of Statistical Social and Economic Research (ISSER), Institute of African Studies (IAS), Legon Centre for International Affairs and Diplomacy (LECIAD), School of Nursing and Midwifery, and his immediate past post was at the College of Health Science administration as Senior Assistant Registrar in-charge of General Administration. He is married and blessed with five children.

The Institute and staff welcome Mr. Theodore Matey Ahuno and wish him successful working relations at the NMIMR.
Mr. Okyere Boateng is the immediate past Administrator of the NMIMR.

He graduated from the University of Cape Coast with a BSc. in Agriculture and a Diploma in Education (1986); obtained MSc in Wood Technology & Management from Kwame Nkrumah University of Science and Technology (1999) and an MHSc in Bioethics from the Joint Centre for Bioethics, University of Toronto, Canada (2008). He also has a certificate in Horticulture from the Hebrew University of Jerusalem (1988) and a Certificate in Management of Higher Education Institutes from the Galilee Institute, Nahalal, Israel (2007).

Mr. Boateng started work in University Administration at the NMIMR, University of Ghana, Legon as a Junior Assistant Registrar in 2000 and rose through the ranks to the position of a Deputy Registrar in 2019 when he retired from the University after 17 years’ service at NMIMR and about 2 years at the School of Public Health. As the Administrator at NMIMR, he worked under four Directors of the Institute – Professors D. Ofori-Adjei, A.K. Nyarko, K.A. Koram and A. K Anang.

Apart from his work as a university Administrator Mr. Boateng is a passionate Research Ethicist and served as a member of Institutional Review Board (IRB) and Administrator at NMIMR for ten years. During his service at the Institute, he successfully executed four projects in research ethics building capacity and resourcing research ethics committees in the country.

He has been a Resource person for research ethics programmes including training of Research Ethics Committee Members, Researchers and Students in the University. As a research ethics resource person, he has facilitated programmes including Good Clinical Practice Training for Clinical Trial Projects at the NMIMR, Navrongo Health Research Centre (NHRC) and the Food and Drugs Authority (FDA).

Mr. Boateng was part of the team of experts invited by the World Health Organization (WHO) to develop guidelines on ethical issues in Public Health Surveillance which was published by WHO in 2017. Between 2009 and 2015, he served as a member of the Programmatic sub-Committee of the non-profit organization Public Responsibility in Medicine and Research (PRIMR), USA.

Mr. Boateng also serves as chair on a number of research ethics committees in the country. He has four publications and a book chapter to his credit.
Prof. George Armah, who has been declared a “Vaccine Hero” by the Bill and Melinda Gates Foundation, delivered the 3rd Professor Duncan Steele Lecture titled “The African Rotavirus Network Partnership: Impact on Child Health in Africa” in Johannesburg, South Africa during the 12th African Rotavirus Symposium, July 30 – August 1, 2019.

Prof. George Armah is a founding member of the African Rotavirus Network. He was a panelist at a special session marking a decade of rotavirus vaccination in Africa, the 20th Anniversary of the African Rotavirus Network, and the 50th Anniversary of the South African Medical Research Council (SAMRC), during the 12th African Rotavirus Symposium, Johannesburg South Africa, July 30 – August 1, 2019.
Dr. Isaac Darko Otchere, a Research Fellow at the Department of Bacteriology, has received a postdoctoral fellowship from the Crick African Network’s African Career Accelerator (CAN ACA) for 2019 (Grant ref: CAN/C00008/1). The award is for young, intelligent and self-motivated African scientists who aim to become independent researchers leading their own research groups. Dr. Otchere is interested in the use of high throughput technologies to study the basis of bacterial evolution, virulence, pathogenesis and emergence of drug resistance. He is fascinated with bioinformatics discovery of biomarkers for monitoring treatment, development of vaccines, diagnostics as well as targets for drug development.

Mr. Senyo Botchie a Senior Research Assistant at the Department of Parasitology has received a Drug Discovery Training scholarship from Wellcome Centre for Anti-infectives Research (WCAIR) at Dundee, United Kingdom. The training is to enhance knowledge of Cryptosporidium, a parasite that causes diarrhoea, fever and weakness, particularly in children and to develop capacity for research in Cryptosporidium drug discovery. The new collaboration between Dr. Irene Ayi, of Department of Parasitology and Dr. Mattie Pawłowic’s lab of the University of Dundee aims at impacting positively by bridging the gap between the research lab and the community through natural product drug discovery.

Erasmus Nikoi Kotey a PhD student at WACCBIP and Senior Research Assistant at the Department of Virology has received an award from WHO Global Influenza Surveillance and Response Systems (GISRS) to attend a Bioinformatics Training Workshop and OPTION X participation, at Singapore. This award included funds for travel.

Augustina Kwakyewaa Arjarquah a Senior Research Assistant at the Department of Virology has received OPTION X Travel Fellowship Award 2019 by Bill and Melinda Gates Foundation as a young Investigator and a Travel Grant Award RSVWW 2019 by Bill and Melinda Gates Foundation from the Board of ReSViNET Foundation.
As a core mandate of the Institute, the departments carried out various research activities within the period under review. Below are some research activities from three of the nine departments:

**DEPARTMENT OF CLINICAL PATHOLOGY**

1. Anti-cancer drug discovery project—Investigations on anti-cancer activities of medicinal plants (Breast cancer project funded by AngloGold Ltd)
3. H3Africa - Kidney Disease Project (Funded by NIH, USA)

**DEPARTMENT OF ELECTRON MICROSCOPY AND HISTOPATHOLOGY**

1. 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 Ghanaian infants. (Funded by Bill and Melinda Gates Foundation; **Sponsor:** PATH. **Collaborators:** Programme for Appropriate Technology in Health, (PATH), and Dodowa Health Research Centre, Dodowa)
2. Development of bacteriophage cocktails as disease biocontrol agents for improved aquaculture productivity, food and nutrition safety in Ghana and Uganda. (Funded by The African Union Commission. **Collaborators:** College of Veterinary Medicine, Animal Resources and Biosecurity Makerere University, Kampala Uganda, CSIR-Food Research Institute of Ghana ETH-Zurich, Switzerland, and University of Cape Coast, Ghana).
3. African Enteric Viruses Genome Initiative (AEVGI): Impact of Rotarix vaccine introduction on genome evolution of human rotaviruses in Ghana. (Funded by Bill and Melinda Gates Foundation. **Collaborators:** University of the Free State (UFS), Bloemfontein, South Africa, University of Malawi, Blantyre, Malawi Johns Hopkins Program Cameroon/Military Health Research Center (CRESAR), University of Yaoundé I, Cameroon. Sefako Makgatho Health Sciences University, and Monash University, Australia).

**DEPARTMENT OF IMMUNOLOGY**

1. The role of the mosquito bite on the dynamics and infectiousness-to-mosquito of asymptomatic *Plasmodium falciparum* carriers in Ghana (Funded by a grant from IRD, France).
2. Novel malaria multi-epitope vaccine design. (Funded by Congressionally Directed Medical Research Programme (CDMRP). **Collaborators:** Naval Medical Research Centre (NMRC) and Walter Reed Army Institute of Research, WRAIR, USA).
3. *Plasmodium falciparum* gametocytogenesis *in vitro* and *in vivo*. (Funded by NIAID – USA. **Collaborators:** Uniformed Services University of the Health Sciences, MD, USA).
4. Malaria Vaccine and Research Capacity Building (MAVARECA) II. (Funded by Danida. **Collaborator:** WACCBIP, University of Ghana and University of Copenhagen).
Postdoctoral Fellowship Projects
1. BSU III Malaria Haemoglobinopathies project.
2. HIV cure research project (HCRIS).

Conferences and Seminars:

Department of Bacteriology
Oral presentations
• Egyir B. Antimicrobial Resistance In Commonly Isolated Bacteria Species in Ghana: A Snapshot of Related Studies/Activities at NMIMR Proceedings of the NMIMR@40 Research Conference, Pages 44-45, Nov. 2019

Poster presentations
• Egyir B. Antimicrobial Resistance and Molecular Characterisation of Staphylococcus aureus from Surgical Site Infections in Ghana. Proceedings of the American Society of Tropical Medicine and Hygiene 68th Annual Meeting, No. LB-5254, Nov. 2019
• Dsani E, Appiah TD, Afari E, Egyir B. Antimicrobial Resistance and Molecular Detection of Extended Spectrum Beta-Lactamase Producing Escherichia Coli From Raw Meat in Ghana. Proceedings of the NMIMR@40 Research Conference, Page 53 Nov, 2019

Department of Clinical Pathology
Oral Presentations
• Appiah-Opong R. Ghana Science Association, 31st Biennial Conference, held at University of Cape Coast. Theme: Promoting Science, Technology and Innovation for Sustainable Growth and Development. In vivo modulation of rat liver microsomal cytochrome P450 activity by anti-malarial, anti-HIV and anti-tuberculosis plant medicines, from July 30-August 2, 2019
• Appiah-Opong R. Noguchi@40 International Scientific Conference, held at Noguchi Memorial Institute for Medical Research University of Ghana. “Studies on Ghanaian Medicinal Plants at NMIMR” November 28 – 29, 2019.

Department of Electron Microscopy & Histopathology
Oral Presentations
• Armah G. Rotavirus vaccines: progress and challenges in Africa. 15th Annual African Vaccinology Course (AAVC). South Africa, November 4-8, 2019

Poster Presentations:

Department of Immunology
Poster Presentations

Department of Virology
Oral presentations
• Kotei EN. WACCBIP Research Conference 2019 on Building Partnerships towards Health care Innovation for Africa at Department of Biochemistry Cell and Molecular Biology, University of Ghana from 24th to 26th July, 2019.

Poster Presentations
• Kotei EN. OPTION X for the Control of Influenza at SUNTEC, Singapore within the period of 28th August to 1st September, 2019.
• Kotei EN. Presence of Influenza A (H9N2) viruses in Ghanaian Military Barracks. “Sentinel Surveillance of Influenza Viruses in Ghana, 2011-2018”.
• Arjarquah AK. OPTION X for the Control of Influenza at SUNTEC, Singapore within the period of 28th August to 1st September, 2019. Occurrence of Influenza and Bacteria Coinfections in Upper-torso Cancer Patients receiving Radiotherapy in Ghana

• Arjarquah AK. Respiratory Syncytial Virus Infections in High-Risk Cancer Patients under going Radiotherapy. RSVVW 2019”– A Global Conference on Novel Respiratory Syncytial Virus (RSV) Preventive and Therapeutic Interventions, organized by the ReSViNET Foundation at Movenpick Ambassador Hotel, Accra, Ghana from 12th to 14th November, 2019.

• Arjarquah AK. Upper-torso Cancer Patients receiving Radiotherapy. NMIMR @40th Anniversary Research Conference, NMIMR-University of Ghana, Accra Ghana from 28th & 29th 2019.

SPECIAL FEATURE - COMMUNITY OUTREACH AT GOMOA ONYAADZE

The Institute, as part of its 40th Anniversary Celebration activities, held a free health screening dubbed “NMIMR goes to the community” at the Noguchi Memorial Health Centre, Gomoa Onyaadze in the Central Region on Wednesday, 23rd October 2019.

The Noguchi Memorial Health Centre was established by the Institute with support from the Japanese government. It is a sub-district Centre that serves 12 communities in 4 CHPS zones.

Researchers and staff from the Institute together with some medical staff of the Noguchi Memorial Health Centre attended and assisted to make the health outreach a success.

Over 250 people from Onyaadze Community were screened for conditions such as HIV/AIDS, Malaria, Nutritional deficiencies, Tuberculosis, High Blood pressure, Yaws, Hepatitis B, and Syphilis. Participants also received free Chest X-rays as part of screening for Tuberculosis.
A section of the community being screened.

The Institute donated 500 insecticide treated bednets, two Fridges, two office chairs, 10 plastic chairs, 34 pieces of mackintosh, examination screens and gloves to the health centre. Used clothing and footwear were donated to the people and school children of Onyaadze.

Dr. Michael Ofori, a Senior Research Fellow who led the NMIMR delegation, explained that the health screening outreach and donations were the Institute's way of giving back to the

Mr. Clement Bayor, District Health Director who received the items on behalf of the Centre expressed his profound gratitude to the staff of NMIMR for the donation, stating that they would be put to good use immediately to serve the people of Onyaadze and surrounding communities.

The Physician Assistant of the Health Centre, Ms. Stella Aikins added that the donation would go a long way to help the centre and all the 12 communities that benefit from the facility. She urged government and other institutions to provide other equipment to improve the health centre.
EVENTS IN PICTURES

Workshop on building more laboratory capacity for influenza surveillance in Africa

The National Influenza Center (NIC) at NMIMR, in collaboration with WHO and US CDC, hosted a 5-day sub-regional workshop on influenza diagnosis for laboratory scientists from West and Central African countries from 12th to 16th August, 2019. The workshop was aimed at improving diagnostic capacity for influenza virus for laboratory scientists from 12 African countries - Benin, Burkina Faso, Cameroon, Chad, Gabon, Gambia, Guinea, Liberia, Nigeria, Sierra Leone, Togo and Ghana.

NMIMR Signs MoU with PANCOED

NMIMR on Friday, 27th September, 2019 witnessed the signing of the Memorandum of Understanding (MoU) between Pan African College of Education, Health and Management Sciences (PANCOED), Nigeria and University of Ghana (represented by NMIMR).

The representative of PANCOED who signed and sealed the MoU was Provost, Dr. Olaoti Olatunji and it was witnessed by Mr. Olanrewaju Saka, the Admission Officer and the College Exam Officer, Mrs. Erinfolami Adebola Olusola. The Director of the NMIMR, Prof. Abraham K. Anang also signed the MoU on behalf of University of Ghana.

The PANCOED signing of MoU Representative joined the Institute Administrator and the Director

The Director made it known that the MoU has been officially signed by the Pro-Vice-Chancellor (Academic and Student Affairs), Prof. Samuel K. Offei, however the short ceremony was being held at the Institute between Prof. Anang, Director of the Institute and Dr. Olaoti Olatunji from PANCOED to commemorate the event.
GRANTSMANSHIP WORKSHOP

The College of Health Sciences, University of Ghana in collaboration with the Washington University in St. Louis, USA, held the Second Annual Grantsmanship Workshop at the NMIMR.

The 4-day workshop begun on Monday, 21st October, 2019 and ended on Thursday, 24th October, 2019. Facilitators included Prof. Methodius Tuuli from Indiana University, USA. Dr. Benjamin Ola Akande, Assistant Vice Chancellor, Indiana University, International Program-Africa Associate Director, Prof. Sarah England and Dr. Deborah Frank, from Washington University.

Presentation of NARL Photographs

The Shimizu Corporation on Friday, 11th October 2019, presented the completion photographs of the project for the construction of the Noguchi Advanced Research Laboratories (NARL) for infectious diseases to NMIMR's Director. The album showed photographs of the newly established Advanced Research Laboratories at the Institute. The presentation was done by Mr. Yuzawa Takeshi from Shimizu Corporation, Japan.

Visit of the US Ambassador to Ghana

Her Excellency Mrs. Stephanie Sullivan, US Ambassador to Ghana, paid a courtesy call on the Director and staff of NMIMR on 9th September, 2019. She was accompanied by the NAMRU-3 Director, LCDR David Wolfe, NAMRU Commanding Officer and Executive officer from Italy, Capt. Marshall Monteville and CDR Dean Wagner.
A conference of the West African Aedes Surveillance Network (WAASuN) was held at Mensvic Grand Hotel in Accra, on 8th-12th July 2019 under the auspices of the Department of Parasitology, NMIMR. WAASuN was formed to help build capacity in Aedes surveillance activities as well as create awareness on how to control Aedes-borne diseases in the West African sub-region. The President of WAASuN, Dr Samuel Kweku Dadzie hosted the conference which was attended by over 60 participants from 16 West African countries, and Angola, with facilitators from Centers of Disease Control, Atlanta, Emory University, USA and Liverpool School of Tropical Medicine, UK. Among the invited guests was Prof. Abraham Kwabena Anang, Director of Noguchi Memorial Institute for Medical Research, Dr Franklin Asiedu-Bekoe, Head of Disease Surveillance, Ghana Health Service and Dr Keziah Malm, Programme Manager of the Ghana National Malaria Control Programme.

UPCOMING EVENTS

Ghana Wins the Bid to Host the 7th Pan-African Mosquito Control Association (Pamca) Conference

The Ghana Chapter of the Pan-African Mosquito Control Association (PAMCA) has won the bid to host the 7th PAMCA conference in Accra, Ghana. PAMCA is an African professional body that brings together players in the field of mosquito and mosquito-borne disease control. PAMCA exists to provide a platform for capacity building, knowledge sharing and collaboration for concerted vector control initiatives on the African continent. The Ghana Chapter was formed in 2019 and has Dr Samuel Kweku Dadzie, Head of Department of Parasitology, NMIMR, as the President, with other executives drawn from other NMIMR Departments, Department of Animal Biology and Conservation Science of the University of Ghana and the Ghana Malaria Control Programme. The conference will be held from 18th-25th September 2020 at Movenpick Hotel in Accra with over 500 participants expected to attend.
OUR COLLABORATORS/FUNDERS

- Anesvad Foundation (Spain)
- Bill and Melinda Gates Foundation
- British Council
- Canadian International Development Agency (Canada)
- Centers for Diseases Control and Prevention (USA)
- Centre for Neglected Tropical Diseases (UK)
- Centre for Plants Medicine and Research
- Congressionally Directed medical Research Program (CDMRP)/US Department of Defense (DoD)
- Danish International Development Agency (Denmark)
- European Foundation Initiative for Neglected Tropical Diseases
- European Commission
- European Union
- European Union – African, Caribbean and Pacific Group of States (EU-ACP)
- European-Developing Countries Training Partnership (EDCTP)
- Family Health International
- Finatrade
- French Embassy
- General Resonance, USA
- Ghana Health Service
- Ghana National Petroleum Corp. (GNPC)
- Global Alliance for Improved Nutrition
- Global Fund
- Holger Poehlmann-Arzt
- Inter-Flemish University Council
- International Association of National Public Health Institutes
- International Development and Research Center (Canada)
- Japan International Cooperation Agency (JICA)
- Johns Hopkins Program Cameroon/Military Health Research Center (CRESAR), University of Yaoundé I, Cameroon.
- Memorial Sloan Kettering Cancer Center
- Ministry of Health- Ghana
- National AIDS Control Program
- National Centre for Competence in Research, North-South (Switzerland)
- National Malaria Control Programme
- Netherlands Organization for Scientific Research – Science for Global Development
- Pasteur Stopenterics Services
- Prince Alwaleed Foundation
- Programme for Appropriate Technology in Health
- Research Triangle International (USA)
- Royal Society of UK
- St. Jude Center of Excellence for Influenza Research and Surveillance (USA)
- Sefako Makgatho Health Sciences University, Medunsa, Pretoria, South Africa
- Monash University, Australia
- Swiss Development Co-operation (Switzerland)
- Swiss Tropical and Public Health Institute (Switzerland)
- Third World Academy of Science
- UBS Optimus Foundation
- United States Agency For International Development
- University Development Cooperation (Belgium)
- University of California (USA)
- University of Heidelberg
- University of Liverpool (UK)
- University of the Free State (UFS), Bloemfontein, South Africa
- University of Malawi, Blantyre, Malawi
- University of Wageningen, The Netherlands
- US Naval Medical Research Center
- US National Institutes of Health
- National Institute of Allergy and Infectious Diseases
- Vestergaard
- VW Foundation
- Wellcome Trust (UK)
- West African Health Organization (WAHO)
- World Health Organization (Geneva)
- WHO Health Metrics Network (Geneva)
- World Health Organization Multi-lateral Initiative on Malaria
- World Health Organization Training and Development in Tropical Diseases (WHO/TDR)
- World Health Organisation Pesticide Evaluation Scheme (WHO/OPES)
- Zenith Bank, Ghana
COMMITTEE MEMBERS

• Prof. Regina Appiah-Opong
• Dr. Kwadwo Asamoah Kusi
• Dr. Gloria Ivy Mensah
• Dr. Charles Quaye
• Mrs. Gloria Obeng-Benefo
• Mrs. Dorcas Opai-Tetteh
• Mrs. Dora Asomani-Owusu

Photo Credit: Mr. Hudson Odoi
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