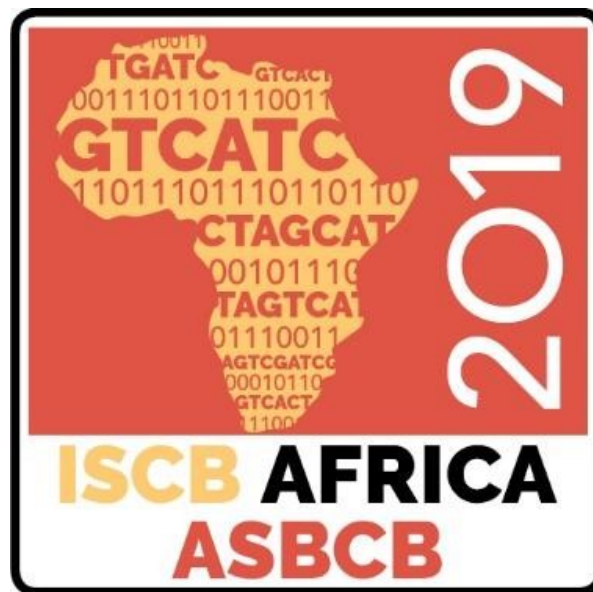# ISCB Africa ASBCB Conference



# Kwame Nkrumah University of Science and Technology Kumasi, Ghana

## November 11-15, 2019

## Program Booklet

# ISCB Student Council Symposium Africa 2019
## IDL Conference Center, Kumasi, Ghana
### Monday, 11 November 2019

| | | | |
|---|---|---|---|
| 08:00 | 09:00 | Registration | |
| 09:00 | 09:10 | Welcome and opening | Dr P Salifu |
| 09:10 | 09:55 | Keynote 1 | |
| | | Looking for LUCA - and other evolutionary tales | Prof Christine Orengo |
| 09:55 | 10:10 | A Computational Method for the Identification of Dengue, Zika and Chikungunya Virus Species and Genotypes | San James |
| 10:10 | 10:25 | Analysis of Population Genomic variation of Plasmodium falciparum Clinical isolates in Ghana | James Abugri |
| 10:25 | 10:55 | Tea break | |
| 10:55 | 11:40 | Keynote 2 | |
| | | Leveraging open science and collaborative research for better health outcomes | Dr Amel Ghoulia |
| 11:40 | 11:55 | Fine-scale human genetic structure in three Cameroon malaria-endemic regions and signatures of selection in the HBB gene cluster | Kevin Esoh Kum |
| 11:55 | 12:10 | A phylogenetic and phylogeographic meta-analysis of cytochrome c oxidase I barcode sequences of East African Arthropods submitted into the Barcode of Life Database | Gilvert Kibet-Rono |
| 12:10 | 13:10 | Lunch | |
| 13:10 | 13:25 | Characterisation of CYP2D6 Pharmacogenomic Variation in African Populations: an Integrative Bioinformatics Approach | David Twesigomwe |
| 13:25 | 13:40 | Development of Classifier for Breast Cancer Metastasized Sites Using Artificial Neural Network | Haward Ketoyo Msatsi |
| 13:40 | 13:55 | The Role of rs41423247 in Protection Against Hypothalamic-Pituitary-Adrenal Suppression in Asthmatic Children on Corticosteroids | Wisdom Akurugu |
| 13:55 | 14:10 | Wavelets based feature extraction with principal component analysis for predicting autism in neonates using Bayesian classifier | Isabel Mensah |
| 14:10 | 14:35 | Tea break | |
| 14:35 | 15:00 | Prize giving and closing | |

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## Monday, November 11, 2019

| START TIME | END TIME | SESSION TYPE |
|---|---|---|
| Registration 8:30 AM - 4:30 PM  *Location: Entrance to Main Conference Hall* | | |
| 4:00 PM | 4:15 PM | **Opening Ceremonies** |
| 4:15 PM | 5:00 PM | **Keynote 1** - Solomon Ofori-Acquah |
| 5:00 PM | 8:00 PM | **Conference Dinner**   *Location: Terrace* |

## Tuesday, November 12, 2019

| START TIME | END TIME | SESSION TYPE |
|---|---|---|
| Registration 8:30 AM - 4:30 PM  *Location: Entrance to Main Conference Hall* | | |
| 9:00 AM | 9:45 AM | **Keynote 2** – Cristobal Uauy |
| **Session 1 - Agricultural Bioinformatics**  *Location: Main Conference Hall* | | |
| 9:45 AM | 10:00 AM | **Temitayo Olagunju** - A Multi-layer Network Model in Study of Small RNA-mediated Gene Regulatory Network of Cassava in Diseased Condition |
| 10:00 AM | 10:15 AM | **Cristobal Uauy** - Unlocking the polyploid potential of wheat through bioinformatics and genomics |
| 10:15 AM | 10:30 AM | **Uljana Hesse** - The Rooibos Genomics Program |
| 10:30 AM | 10:45 AM | **Mary Maranga** - First African-led genome sequencing of an Africa orphan crop - African yam bean (Sphenostylis stenocarpa) |
| 10:45 AM | 11:00 AM | **Anthony Bayega** - De novo genome assembly combined with long-read RNA-seq reveal insights into early embryo development of an important agricultural insect |
| 11:00 AM | 11:30 AM | **Break with Posters**   *Location: Terrace* |
| **Session 2 - General Interest and Education**  *Location: Main Conference Hall* | | |
| 11:30 AM | 11:45 AM | **Jean-Baka Domelevo Entfellner** - Building capacity towards a sustainable bioinformatics network for agricultural genomics in Africa: an innovative training initiative |
| 11:45 AM | 12:00 PM | **Verena Ras** - IMPLEMENTATION OF ADVANCED BIOINFORMATICS TRAINING ACROSS AFRICA |
| 12:00 PM | 12:15 PM | **Susmita Datta** - Advances and Challenges in Single Cell RNA-Seq Analysis |
| 12:15 PM | 12:30 PM | **Aoua Colibaly** - Characterizing the genetic diversity of Plasmodium falciparum isolates from two Malian villages by leveraging the computing environment at the African Centers of Excellence in Bioinformatics |
| 12:30 PM | 12:45 PM | **Martha Luka** - Molecular epidemiology of human rhinovirus from one-year surveillance among school-going children in rural coastal Kenya |
| 12:45 PM | 1:00 PM | **Oluwafemi Peter Abiodun** - Development of an effective information security policy for biomedical researchers |
| 1:00 PM | 2:00 PM | **Lunch Break with Posters** |
| 2:00 PM | 4:00 PM | **Parallel COSI meetings** |
| 4:00 PM | 4:30 PM | **Break with Posters**   *Location: Terrace* |
| 4:30 PM | 5:15 PM | **Keynote 3** - Ciara Staunton |
| 5:15 PM | 6:00 PM | **COSIs report back** |

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| START TIME | END TIME | SESSION TYPE |
|---|---|---|
| Wednesday, November 13, 2019 |||

| START TIME | END TIME | SESSION TYPE |
|---|---|---|
| Registration 8:30 AM - 4:30 PM *Location:  Entrance to Main Conference Hall* | | |
| 9:00 AM | 9:45 AM | **Keynote 4** - Melissa A. Haendel |
| **Session 3 - Informatics of Disease** *Location: Main Conference Hall* |||
| 9:45 AM | 10:00 AM | **Tracey Calvert-Joshua** - Regulatory Networks in Mycobacterium tuberculosis |
| 10:00 AM | 10:15 AM | **Sara Abdelrahman Abuelmaali** - Genetic variations of the yellow fever mosquito "Aedes aegypti" populations from Sudan |
| 10:15 AM | 10:30 AM | **Kholoud Sanak** - Association of MARCO gene variations with cardiovascular diseases development: In silico study |
| 10:30 AM | 10:45 AM | **David Twesigomwe** - Characterisation of CYP2D6 Pharmacogenomic Variation in African Populations: An Integrative Bioinformatics Approach |
| 10:45 AM | 10:00 AM | **Gbenga Adegbite** - Sensitivity, Bifurcation and Optimal Control Analyses of a Stochastic Spatially Explicit Model for Studying the Anopheles Metapopulation Dynamics |
| 11:00 AM | 11:30 AM | **Break with Posters** *Location: Terrace* |
| **Session 4 - Designing & Mining Large-Scale Omics & Epidemiology Resources** *Location: Main Conference Hall* |||
| 11:30 AM | 11:45 AM | **David Roos** - Introduction |
| 11:45 AM | 12:00 PM | **Brianna Lindsay** - Bioinformatic approaches to incorporate epidemiological data |
| 12:00 PM | 12:15 PM | **Sharon Bright Amanya** - VARIATIONS IN TRIM5α AND CYCLOPHILIN A GENES AMONG HIV-1 ELITE CONTROLLERS AND NON-CONTROLLERS IN UGANDA |
| 12:15 PM | 12:30 PM | **Stanley Kimbung Mbandi** - RISK6, a universal 6-gene transcriptomic signature of TB disease risk, diagnosis and treatment response |
| 12:30 PM | 12:45 PM | **James Otieno** - Local and Global RSV Transmission Dynamics |
| 12:45 PM | 1:00 PM | **Paul Okoro** - Machine learning performance for gene expression prediction across global populations |
| 1:00 PM | 1:15 PM | **Kevin Kum Esoh** - Fine-scale human genetic structure in three Cameroon malaria-endemic regions and signatures of selection in the HBB gene cluster |
| 1:15 PM | 2:15 PM | **Lunch Break with Posters and ASBCB AGM** |
| **Session 5 - Drug Design, Discovery, and Therapeutic Strategies** *Location: Main Conference Hall* |||
| 2:15 PM | 2:30 PM | **Emmanuel Broni** - Molecular modelling and docking studies of Wolbachia surface protein predict potential filaricides against Onchocerca volvulus. |
| 2:30 PM | 2:45 PM | **Kwofie Samuel** - Pharmacophore modeling-based virtual screening and molecular docking studies of Mycobacterium ulcerans Cystathionine γ-synthase MetB |
| 2:45 PM | 3:00 PM | **Rania Hassan** - Co-regulatory Network of Oncosuppressor miRNAs and Transcription Factors for Pathology of Human Hepatic Cancer Stem Cells (HCSC) |
| 3:00 PM | 3:15 PM | **Musalula Sinkala** - Metabolic Gene Alterations Across 32 Human Cancer Types and Their Clinical Significance |
| 3:15 PM | 3:45 PM | **Break with Posters** *Location: Terrace* |
| **Session 6 - Bioinformatics Tools and General Bioinformatics** *Location: Main Conference Hall* |||
| 3:45 PM | 4:00 PM | **Gilbert Kibet Rono** - A phylogenetic and phylogeographic meta-analysis of cytochrome c oxidase I barcode sequences of East African Arthropods submitted into the Barcode of Life Database |
| 4:00 PM | 4:15 PM | **Somnath Datta** - Integrating gene regulatory pathways into differential network analysis of gene expression data |
| 4:15 PM | 4:30 PM | **Poorani Subramanian** - Nephele: a cloud-based computational platform for improved efficiency and reproducibility of microbiome data analysis |
| 4:30 PM | 4:45 PM | **Joel Indi** - Reference-free identification of open reading frames and encoded proteins from nanopore transcriptomic long reads |
| 4:45 PM | 5:30 PM | **Keynote 5** - Christine Orengo |
| 5:30 PM | 5:45 PM | **Closing Ceremonies** |

| START TIME | END TIME | SESSION TYPE |
|---|---|---|
| **Thursday, November 14, 2019** | |
| Registration 8:30 AM - 11:30 AM<br>*Location: Entrance to Main Conference Hall* | |
| 9:00 AM | 11:00 AM | **Galaxy Africa 2019**<br>*Location: Library ICT Computer Lab*<br><br>**Machine Learning and Omics Data: Opportunities for Advancing Biomedical Data Analysis**<br>*Location: Main Conference Hall*<br><br>**New Features of the UCSC Genome Browser**<br>*Location: Syndicate Room*<br><br>**Resources for Mining & Interrogating Large-Scale (Genomics and) Epidemiological Datasets**<br>*Location: Teleconference Room* |
| 11:00 AM | 11:30 AM | **Break**   *Location: Terrace* |
| 11:30 AM | 1:00 PM | **Galaxy Africa 2019**<br>*Location: Library ICT Computer Lab*<br><br>**Machine Learning and Omics Data: Opportunities for Advancing Biomedical Data Analysis**<br>*Location: Main Conference Hall*<br><br>**New Features of the UCSC Genome Browser**<br>*Location: Syndicate Room*<br><br>**Resources for Mining & Interrogating Large-Scale (Genomics and) Epidemiological Datasets**<br>*Location: Teleconference Room* |
| 1:00 PM | 2:15 PM | **Lunch**   *Location: Terrace* |
| 2:15 PM | 3:15 PM | **Galaxy Africa 2019**<br>*Location: Library ICT Computer Lab*<br><br>***Machine Learning and Omics Data: Opportunities for Advancing Biomedical Data Analysis***<br>*Location: Main Conference Hall*<br><br>***New Features of the UCSC Genome Browser***<br>*Location: Syndicate Room*<br><br>***Resources for Mining & Interrogating Large-Scale (Genomics and) Epidemiological Datasets***<br>*Location: Teleconference Room* |
| 3:15 PM | 3:45 PM | **Break**   *Location: Terrace* |
| 3:45 PM | 5:00 PM | **Galaxy Africa 2019**<br>*Location: Library ICT Computer Lab*<br><br>**Machine Learning and Omics Data: Opportunities for Advancing Biomedical Data Analysis**<br>*Location: Main Conference Hall*<br><br>**New Features of the UCSC Genome Browser**<br>*Location: Syndicate Room*<br><br>**Resources for Mining & Interrogating Large-Scale (Genomics and) Epidemiological Datasets**<br>*Location: Teleconference Room* |

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| START TIME | END TIME | SESSION TYPE |
|---|---|---|
| Registration 8:30 AM - 11:30 AM *Location: Entrance to Main Conference Hall* | | |
| 9:00 AM | 11:00 AM | **Galaxy Africa 2019** *Location: Library ICT Computer Lab*<br><br>**Machine Learning and Omics Data: Opportunities for Advancing Biomedical Data Analysis** *Location: Main Conference Hall*<br><br>**Resources and Tools for Computer-Aided Drug Discovery** *Location; Syndicate Room*<br><br>**H3ABioNet - Data Management Plans for Grant Proposals & Research** *Location: Teleconference Room* |
| 11:00 AM | 11:30 AM | **Break** *Location: Terrace* |
| 11:30 AM | 1:00 PM | **Galaxy Africa 2019** *Location: Library ICT Computer Lab*<br><br>**Machine Learning and Omics Data: Opportunities for Advancing Biomedical Data Analysis** *Location: Main Conference Hall*<br><br>**Resources and Tools for Computer-Aided Drug Discovery** *Location; Syndicate Room*<br><br>**H3ABioNet - Data Management Plans for Grant Proposals & Research** *Location: Teleconference Room* |
| 1:00 PM | 2:15 PM | **Lunch** *Location: Terrace* |
| 2:15 PM | 3:15 PM | **Galaxy Africa 2019** *Location: Library ICT Computer Lab*<br><br>**Machine Learning and Omics Data: Opportunities for Advancing Biomedical Data Analysis** *Location: Main Conference Hall*<br><br>**Resources and Tools for Computer-Aided Drug Discovery** *Location; Syndicate Room*<br><br>**H3ABioNet - Data Management Plans for Grant Proposals & Research** *Location: Teleconference Room* |
| 3:15 PM | 3:45 PM | **Break** *Location: Terrace* |
| 3:45 PM | 5:00 PM | **Galaxy Africa 2019** *Location: Library ICT Computer Lab*<br><br>**Machine Learning and Omics Data: Opportunities for Advancing Biomedical Data Analysis** *Location: Main Conference Hall*<br><br>**Resources and Tools for Computer-Aided Drug Discovery** *Location; Syndicate Room*<br><br>**H3ABioNet - Data Management Plans for Grant Proposals & Research** *Location: Teleconference Room* |

**Friday, November 15, 2019**

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Thank you for attending the ISCB Africa ASBCB 2019 Conference. Please read all of the information provided below and visit the conference registration desk should you have any additional questions about conference activities.

## ATM
From the IDL Conference Centre, the nearest ATMs are available at the Commercial area adjacent the Jubilee Mall. There are 9 banks on campus including Ecobank, GT Bank, CAL Bank, UBA, Barclays Bank, Standard Chartered Bank, Stanbic Bank, Republic Bank, Ghana Commercial Bank and Consolidate Bank. All located at the Commercial area. Directions are shown in the map here
https://goo.gl/maps/goQDAUFJU2s4Uziw6)
For additional information and details, please stop by the registration desk.

## Awards
The following awards will be presented at the closing ceremony:
Best Presentation and Best Poster

## Badge Policy
Your name badge functions as your admission to all official conference activities. As a safety tip, please remember to take off your conference badge any time you go outside the conference area.

## Cell Phones
As a courtesy to your fellow attendees, and especially the presenters and speakers, please turn off or silence your cell phone or any other portable electronic devices.

## Certificates of Attendance
Certificate of attendance will be sent via email at the end of the conference.

## Conference Evaluation Forms
The conference evaluation will be emailed to all registrants. Please take a few moments to complete the evaluation, as it provides valuable feedback that assists in planning future conferences.

## Emergencies
In the event of an emergency, the below numbers are for you use:
General Security on campus - +233-3220-60229
Police – 191/18555
Emergency-Ambulance -193
Local Contacts on KNUST Campus:
Dr. Pandam Salifu +233209583359

## Endorsements
ISCB Africa ASBCB does not endorse the products or services displayed or sold by sponsors, exhibitors or advertisers, or the views expressed by any speaker or other conference participant.

## Job Opportunities
A poster board will be available for you to post jobs and candidates to post resumes. If you require any assistance on-site with the job opportunities board, please ask at the registration desk.

## Maps
Please visit this website for local maps:
https://www.knust.edu.gh/about/knust/maps

## Meeting Room Overcrowding
Law requires that we follow room capacity regulations set forth by the fire marshal. We ask that you respect request from conference staff in regards to room overcrowding. We appreciate your cooperation. Thank you.

## Membership
If you are interested in joining ISCB or ASBCB, Please proceed to the registration desk or www.iscb.org for more information.

**Poster Sessions**
Poster presentations will be held during two sessions, Odd Number Session and Even Number Session. Posters are listed by number online at https://www.iscb.org/iscbafrica2019-ps/iscbafrica2019-posters-schedule and assigned number will be located on the poster boards. Additional details are available on the website.

**Registration**
Registration will be in the *Entrance to Main Conference Hall*

| | |
|---|---|
| **MONDAY, NOV 11** | **8:30AM TO 4:30PM** |
| **TUESDAY, NOV 12** | **8:30AM TO 4:30PM** |
| **WEDNESDAY, NOV 13** | **8:30AM TO 4:30PM** |
| **THURSDAY, NOV 14** | **8:30AM TO 11:30AM** |
| **FRIDAY, NOV 15** | **8:30AM TO 11:30AM** |

**Restaurants**
There are several cafeteria/restaurants and markets on campus for meals. Most of these are located around the University Halls and Hostels. Here are a few with google map directions:
- Jubilee mall (https://goo.gl/maps/goQDAUFJU2s4Uziw6). Location is also as indicated in the map below.
- Engineering Guesthouse
- Staff Club- about 200 meters from Engineering Guesthouse
- KCCR Restaurant (https://goo.gl/maps/JDrDksFLipoeaQCM8)
- IcyCup (https://goo.gl/maps/nScVtCZ3YzfYFUXcA)
- Aquaroses Pizza (Located at the KNUST Swimming pool)

For additional information and details, please stop by the registration desk.

**Social Events**
- A morning and afternoon coffee break each day
- Lunch each day
  - On Monday, lunch will be provided only for the SCS
  - On Thursday and Friday, lunch will be provided only for those attending workshops
- A dinner on Monday, November 11th

**Smoking Policy**
Please note that smoking is NOT permitted in any KNUST buildings. Smoking is only permitted in designated areas.

**Transportation**
- Please note that a shuttle will be available for these locations:
  Delegates staying at Noda Hotel and the Asantewaa Premier Guesthouse to be picked at 7:15 am everyday to the conference venue and immediately after close of the conference back to their hotels
- Delegates at Engineering Guesthouse and SMS Guesthouse to be picked at 8:00 am everyday to the conference venue and immediately after close of the conference back to their hotels

**Website for RSGDREAM**
For additional and more detailed information please visit the conference website at https://www.iscb.org/recomb-regsysgen2019
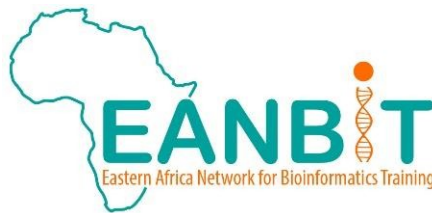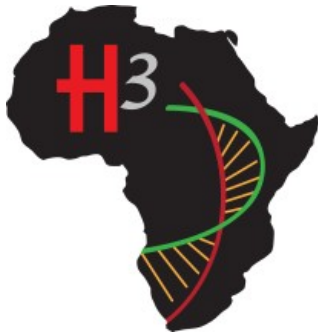
**WiFi Information**
Will be available on site at the registration desk and in the Main Conference Hall

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# NOTES