**Rabies Accessible Genomic Epidemiology (RAGE) Workshop**

*Capacity Building for In-Country Genomic Epidemiology to Underpin One Health Surveillance.*

**Venue: Nigeria Centre for Disease Control, Abuja**

**Date: 12th – 16th December, 2024**

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| **TIME** | **ACTIVITIES** |  |
| **Day 1 – Monday, 12th February, 2024 Ajuji** | | |
| 8:30 – 9:00 AM | Registration | All |
| 9:00 – 9:05 | National Anthem | All |
| 9:05 – 9:15 | Opening and Welcome remarks |  |
| 9:15 – 9:25 | Introductions of dignitaries and Participants |  |
| 9:25 – 9:45 | Keynote message | Prof. O. Tomori |
| 9:45 – 10:10 | Goodwill messages | NCDC, FMAFS, FMHSW, NVRI, ECOWAS, ACEGID, APHA, WHO, FAO, WOAH, US CDC, AFENET, FarmAlert, NVMA, VCN. |
| 10:10 – 10:25 | Ahmadu Bello University (ABU) Centre of excellence, its roles, mandates, and activities on the control and prevention of NTDs in Nigeria | Prof. YKE Ibrahim (Centre Leader ACENTDFB ABU) |
| 10:25 – 10:35 | Rabies, One Health & the 2030 countdown | Prof. Katie Hampson |
| 10:35 – 11:00 | Progress and prospects for RABV genomic research | Dr. Kirstyn Brunker |
| 11:00 -11:10 | Question and Answer session | All |
| 11:10 – 11:40 | Short Presentations:  Making genomic surveillance deliver for rabies  A framework for predicting the impacts of rabies control and prevention strategies in East Africa  Genomic surveillance in the Philippines: an outbreak investigation | Dr. Kathryn Campbell  Martha Luka  Criselda Bautista |
| 11:40 – 12:00PM | Question and Answer session | All |
| 12:00 – 12:10PM | Vote of thanks |  |
| 12:10 – 1:00PM | Pictures | All |
| 1:00 – 2:00PM | *Lunch* | All |
| 2:00 – 2:15 | Introduction to the workshop | *Kirstyn Brunker* |
| 2:15 – 3:00 | Icebreaker |  |
| 3:00 – 3:15 | Approaches to viral genome sequencing | *Kirstyn Brunker* |
| 3:15 – 3:45 | Overview of RAGE sample-sequence-interpretation workflow | *Criselda Bautista* |
| 3:45 – 4:30 | Nanopore sequencing overview | *Kirstyn Brunker* |
| 4:30 – 5:00 | Demo: Lab-in-a-suitcase | *Kirstyn Brunker / Criselda Bautista* |
| *5:00– 5:30PM* | *Tea break & adjourn* | *Trainees and Trainers* |

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| **Day 2 – Tuesday, 13th February, 2024** NCDC Reference lab Gaduwa, Abuja | | |
| 9:00 – 9:30 | Approaches to viral genome sequencing | *Kirstyn Brunker* |
| 9:30- 10:00 | Overview of RAGE sample-sequence-interpretation workflow | *Criselda Bautista* |
| 10:00 – 10:20 | Demo: Lab-in-a-suitcase | *Kirstyn Brunker / Criselda Bautista* |
| 10:20 – 11:00 | Nanopore sequencing overview | *Kirstyn Brunker* |
| 11:00 – 11:20 | General Q&A |  |
| 11:20-12:30 | Lab practical: Flowcell masterclass | *All trainers (Leads: Criselda Bautista/Kirstyn Brunker)* |
| **12:30 - 1:30** | **Lunch** |  |
| 1:30 – 4:30 | Lab practical: Nanopore sequencing library preparation I | *All trainers (Leads: Criselda Bautista/Kirstyn Brunker)* |
| **4:30 – 5:00** | **Tea break** |  |
| ***Day 3 – Wednesday, 14th February, 2024*** *NCDC Reference lab Gaduwa, Abuja* | | |
| 9:00 – 9:15 | Review/Recap of lab | *All trainers (Leads: Criselda Bautista/Kirstyn Brunker)* |
| 9:15 – 11:00 | Lab practical: Nanopore sequencing library preparation II |
| 11:00 – 11:15 | Prime & load library |
| 11:15 – 12:30 | Masterclass: Sequencing & monitoring run |
| **12:30 - 1:30** | **Lunch** |  |
| 1:30 – 1:50 | Bioinformatics in action | *Sandeep Kasaragod* |
| 1:50 – 2:10 | Introduction to the command line & conda | *Kirstyn Brunker* |
| 2:10 – 3:00 | Computer practical: Command line basics | *All trainers (Lead: Sandeep Kasaragod)* |
| **4:30 – 5:00** | **Tea break** |  |
| ***Day 4 – Thursday, 15th February, 2024*** *NCDC Reference lab Gaduwa, Abuja* | | |
| 9:00 – 9:30 | Introduction to sequence data | *Kirstyn Brunker/ Sandeep Kasaragod* |
| 9:30 – 11:00 | Computer practical: Running a bioinformatic pipeline I | *All trainers (Lead: Sandeep Kasaragod)* |
| 11:00 – 11:30 | Discussion/Q&A: Learning to get by with bioinformatics |
| 11:30 – 12:00 | Computer practical: Running a bioinformatic pipeline II |
| 12:00 – 12:30 | Demo: EPI2ME | *Kirstyn Brunker/ Sandeep Kasaragod* |
| **12:30** – **1:30** | **Lunch** |  |
| 1:30 – 2:30 | Intro & Computer practical: Sequence alignment | *All trainers (Lead: Martha Luka)* |
| 2:30 – 3:00 | An introduction to phylogenetics | *Kathryn Campbell* |
| 3:00 – 3:20 | The importance of metadata | *Kirstyn Brunker* |
| 3:20 – 4:30 | Computer practical: Building and annotating phylogenetic trees | *All trainers (Lead: Kathryn Campbell* |
| 4:30 – 5:00 | **Tea break** |  |
| ***Day 5 – Friday, 16th February, 2024*** *NCDC Reference lab Gaduwa, Abuja* | | |
| 9:00 – 9:30 | An introduction to molecular clocks | *Martha Luka* |
| 9:30 – 10:30 | Computer practical: molecular clocks | *All trainers (Lead: Martha Luka)* |
| 10:30 – 11:00 | Demo and follow along: Ancestral state reconstruction | *Kirstyn Brunker* |
| 11:00 – 11:30 | Computer practical: MicroReact, an interactive visualization tool | *Kathryn Campbell* |
| 11:30 – 11:45 | RABV-GLUE and MADDOG overview | *Kathryn Campbell* |
| 11:45 – 12:30 | Computer practical: Classifying clades and lineages | *All trainers (Lead: Kathryn Campbell)* |
| **12:30 - 1:30** | **Lunch** |  |
| 1:30 – 2:30 | Computer practical: Interpreting the results | *Kathryn Campbell* |
| 2:30 – 4:30 | Discussion groups: Translating results to stakeholders |  |
|  | Open evening |  |