

Cancer Genome Analysis (Africa), 12-16 September 2022 (Virtual)

| Pre-course & pre-recorded modules | Link |
|--|---|
| Unix/Linux | FutureLearn Week 1 Course |
| Sample collection, preparation, storage and processing | Solomon Rotimi |
| Molecular diagnostic applications and limitations | Anna Godfrey's Lecture |
| Next generation sequencing technologies | Michael Quail's Lecture |
| Online databases | Nyasha Chambwe |

Introduction zoom link:

Thursday 8th September 2022

| Time | Session | Content | Training team | WCS Staff |
|---|---------|---|---------------|-----------|
| 09:00-11:00 MX 10:00-12:00 EDT 15:00-17:00 BST 16:00-18:00 CAT 17:00-19:00 CET | | Wellcome Connecting Science Welcome and Intro. (5 min) Training team introductions (10 min) Participant introductions (45 min) Intro to cancer genomics (30 min)- Nyasha Cancer genomics and research in LMICs (30 min)- Solomon/Hannah | All | All |

Training team

WCS Team

| | | | | | |
|--------------------|----|------------------|----|----------------|----|
| Daniela Robles | DR | Nana Amoako | NA | Alice Matimba | AM |
| Erik Dawson | ED | Patricia Basurto | PS | Isabela Malta | IM |
| Federico Abascal | FA | Marcos Diaz-Gay | MD | Karon Chappell | KC |
| Floris Barthel | FB | Khadiime Jhumka | KJ | Martin Aslett | MA |
| Hannah Ayettey | HA | Samuel Kojo | SK | Mark Sheppard | MS |
| Ludmil Alexandrov | LA | Collins Moranga | | | |
| Mariana Boroni | MB | Marya Kazachkova | MK | | |
| Nyasha Chambwe | NC | | | | |
| Shakuntala Baichoo | SB | | | | |
| Solomon Rotimi | SR | | | | |

Course zoom link: <https://sanger.zoom.us/j/97926490664?pwd=b29wdmJUaUtZNlvcE9wTkVHM0hvdz09>

Github repository link: https://github.com/WCSCourses/cancer_genome_analysis_africa

Slack workspace: https://join.slack.com/t/wcscancergen-fv63425/shared_invite/zt-1fqwze7l-GlmknOWz0~tBmn54HH6Lsg

Monday 12nd September 2022

| Time | Module | Content/Title | Session structure materials (lecture, prac, breakout room) | Training team | WCS Staff |
|--|-------------------|--------------------------------|---|---|-----------|
| 06:00 - 07:30 EDT 11:00 - 12:30 BST 12:00 - 13:30 CAT | 1 | Intro to Data formats & QC | Lecture | Daniela, Eric Nyasha, Mari, Solomon, Sam | IM KC |
| 15 minutes | BREAK | | | | |
| 07:45 - 08:45 EDT 12:45 - 13:45 BST 13:45 - 14:45 CAT | 1 | Data formats & QC | Practical | Daniela, Eric Nyasha, Mari, Solomon, Sam | IM |
| 45 minutes | MEAL BREAK | | | | |
| 09:30 - 10:45 EDT 14:30 - 15:45 BST 15:30 - 16:45 CAT | 1 | Data formats & QC | Practical (continued) | Daniela, Eric Nyasha, Mari, Solomon, Sam | IM |
| 15 minutes | BREAK | | | | |
| 11:00 - 11:45 EDT 16:00 - 16:45 BST 17:00 - 17:45 CAT | S1 | Funmi's Research Highlights | Seminar | Funmi Olopade | IM |
| 11:45 - 13:15 EDT 16:45 - 18:15 BST 17:45 - 19:15 CAT | 1 | NGS file formats and data & QC | Practical (continued) | Daniela, Eric Nyasha, Mari, Solomon, Sam | IM |
| 13:15 - 13:30 EDT 18:15 - 18:30 BST 19:15 - 19:30 CAT | | <i>Day wrap-up</i> | | | IM |

Tuesday 13th September 2022

| Time | Module | Content/Title | Session structure materials (lecture, prac, breakout room) | Training team | WCS Staff |
|--|-------------------|--|---|---|-----------|
| 06:00 - 07:00 EDT 11:00 - 12:00 BST 12:00 - 13:00 CAT | 2 | Mutation Calling: Theory behind variant calling, modification for cancer calling algorithms, different callers available | Lecture | Floris, Eric Mariana, Daniela, Patricia, Nyasha, Collins | IM KC |
| 07:00 - 07:30 EDT 12:00 - 12:30 BST 13:00 - 13:30 CAT | 2 | Mutation Calling: Run a mutation caller on cancer sequencing files | Practical | Floris, Eric Mariana, Daniela, Patricia, Nyasha, Collins | IM |
| 15 minutes | BREAK | | | | |
| 07:45 - 18:45 EDT 12:45 - 13:45 BST 13:45 - 14:45 CAT | 2 | Mutation Calling: Do mutation filtering, perform consequence calling | Practical | Floris, Eric Mariana, Daniela, Patricia, Nyasha, Collins | IM |
| 45 minutes | MEAL BREAK | | | | |
| 09:30 - 10:15 EDT 14:30 - 15:15 BST 15:30 - 16:15 CAT | S2 | Pan-Cancer Characterization of Ancestry-related Molecular Phenotypes in Cancer | Seminar | Nyasha Chambwe | IM |
| 10:15 - 11:30 EDT 15:15 - 16:30 BST 16:15 - 17:30 CAT | 2 | Mutation Calling: Perform consequence calling | Practical (continued) | Floris, Eric Mariana, Daniela, Patricia, Nyasha, Collins | IM |
| 15 minutes | BREAK | | | | |
| 11:45 - 13:15 EDT 16:45 - 18:15 BST 17:45 - 19:15 CAT | 2 | Mutation Calling: Create a summary of results | Practical | Floris, Eric Mariana, Daniela, Patricia, Nyasha, Collins | IM |
| 13:15 - 13:30 EDT 18:15 - 18:30 BST 19:15 - 19:30 CAT | | <i>Day wrap-up</i> | | | IM |

Wednesday 14th September 2022

| Time | Module | Content/Title | Session structure materials (lecture, prac, breakout room) | Training team | WCS Staff |
|--|-------------------|---|---|---|-----------|
| 06:00 - 07:00 EDT 11:00 - 12:00 BST 12:00 - 13:00 CAT | 3 | Driver Gene Identification & Oncoplots | Lecture | Federico Shakuntala, Mariana, Daniela, Eric, Patricia, Sam | IM KC |
| 07:00 - 07:30 EDT 12:00 - 12:30 BST 13:00 - 13:30 CAT | 3 | Driver Gene Identification Exercises | Practical | Federico Shakuntala, Mariana, Daniela, Eric, Patricia, Sam | IM |
| 15 minutes | BREAK | | | | |
| 07:45 - 08:45 EDT 12:45 - 13:45 BST 13:45 - 14:45 CAT | 3 | Driver Gene Identification: Try different methods | Practical | Federico Shakuntala, Mariana, Daniela, Eric, Patricia, Sam | IM |
| 45 minutes | MEAL BREAK | | | | |
| 09:30 - 10:15 EDT 14:30 - 15:15 BST 15:30 - 16:15 CAT | S3 | Cancer genomics in Latin America | Seminar | Daniela Robles | IM |
| 10:15 - 11:30 ET 15:15 - 16:30 BST 16:15 - 17:30 CAT | 3 | Compare Results & Discuss | Practical (continued) | Federico Shakuntala, Mariana, Daniela, Eric, Patricia, Sam | IM |
| 15 minutes | BREAK | | | | |
| 11:45 - 13:15 EDT 16:45 - 18:15 BST 17:45 - 19:15 CAT | 3 | Generate Oncoplots | Practical | Federico Shakuntala, Mariana, Daniela, Eric, Patricia, Sam | IM |
| 13:15 - 13:30 EDT 18:15 - 18:30 BST 19:15 - 19:30 CAT | | <i>Day wrap-up</i> | | | IM |

Thursday 15th September 2022

| Time | Module | Content/Title | Session structure materials (lecture, prac, breakout room) | Training team | WCS Staff |
|--|-------------------|--|---|---|-----------|
| 06:00 - 07:00 EDT 11:00 – 12:00 BST 12:00 – 13:00 CAT | 4 | Mutation Signatures | Lecture | Shakuntala, Eric, Ludmil, Marcos, Mariya, Khadime | IM KC |
| 07:00 - 07:30 EDT 12:00 – 12:30 BST 13:00 - 13:30 CAT | 4 | Generation of mutational profiles | Practical | Shakuntala, Eric, Ludmil, Marcos, Mariya, Khadime | |
| 15 minutes | BREAK | | | | |
| 07:45 - 18:45 EDT 12:45 – 13:45 BST 13:45 - 14:45 CAT | 4 | Mutation Signatures: Extraction using SigProfilerExtractor | Practical | Shakuntala, Eric, Ludmil, Marcos, Mariya, Khadime | IM |
| 45 minutes | MEAL BREAK | | | | |
| 09:30 - 10:15 EDT 14:30 - 15:15 BST 15:30 - 16:15 CAT | S4 | Esophageal Cancer genomics in Africa: Research opportunities and challenges | Seminar | Hannah Simba | IM |
| 10:15 - 11:30 EDT 15:15 - 16:30 BST 16:15 - 17:30 CAT | 4 | Mutation Signatures: Interpretation of the extracted signatures | Practical (continued) | Shakuntala, Eric, Ludmil, Marcos, Mariya, Khadime | IM |
| 15 minutes | BREAK | | | | |
| 11:45 - 13:15 EDT 16:45 - 18:15 BST 17:45 - 19:15 CAT | 4 | Mutation Signatures: Assigning reference mutational signatures to individual samples | Practical | Shakuntala, Eric, Ludmil, Marcos, Mariya, Khadime | IM |
| 13:15 - 13:30 EDT 18:15 - 18:30 BST 19:15 - 19:30 CAT | | <i>Day wrap-up</i> | | | IM |

Friday 16th September 2022

| Time | Module | Content/Title | Session structure materials (lecture, prac, breakout room) | Training team | WCS Staff |
|--|-------------------|-------------------------|---|--|-----------|
| 06:00 - 07:00 EDT 11:00 – 12:00 BST 12:00 – 13:00 CAT | 5 | RNA Deconvolution | Lecture | Mariana, Daniela Eric, Collins | IM KC |
| 07:00 - 07:30 EDT 12:00 – 12:30 BST 13:00 - 13:30 CAT | 5 | RNA Deconvolution | Practical (Demo) | Mariana, Daniela Eric, Collins | |
| 15 minutes | BREAK | | | | |
| 07:45 - 08:15 EDT 12:45 – 13:15 BST 13:45 - 14:15 CAT | 5 | RNA Deconvolution | Practical (Continued) | Mariana, Daniela Eric, Collins | IM |
| 45 minutes | MEAL BREAK | | | | |
| 09:00 - 09:45 EDT 14:00 – 14:45 BST 15:00 - 15:45 CAT | S5 | African Cancer Networks | Seminar | Solomon Rotimi | IM |
| 09:45 - 11:15 EDT 14:45 - 16:15 BST 15:45 - 17:15 CAT | | Micro Projects | | Daniela/Solomon | IM |
| 15 minutes | BREAK | | | | |
| 11:30 - 13:00 EDT 16:30 - 18:00 BST 17:30 - 19:00 CAT | | Micro Projects | | Daniela/Solomon | IM |
| 13:00 - 13:15 EDT 18:00 - 18:15 BST 19:00 - 19:15 CAT | | <i>Course Wrap-up</i> | | | IM KC |