

# Resilience through training for low and middle-income countries

Advanced Courses and Scientific Conferences (ACSC) not only provides genomics training for low and middle-income countries (LMICs) but also empowers them to **BUILD SELF-SUSTAINING REGIONAL NETWORKS**.

**Shortly to celebrate its 10th birthday**, the *Molecular Approaches to Clinical Microbiology* course in Africa is showing why it is one of ACSC's leading overseas programmes. The course trains participants to apply molecular and sequencing techniques in routine clinical diagnosis of regional pathogens. Previous attendees join a pool of mid-career African scientists, many of who return to lead parts of the training — giving back by inspiring new early career participants. The course has

evolved into a strong, self-sustaining regional network in a critical, capacity-building activity.

This sustainable approach is core to the ACSC Overseas programme, which has been delivering genomics and bioinformatics training in Africa, Asia, Latin America and the Caribbean for 15 years. World renowned for its capacity building efforts, ACSC recently expanded its portfolio to offer 10 free-to-attend courses per year to widen reach and provide greater access to world-class

training. This expansion complements existing efforts in LMICs, aimed at training healthcare professionals and research scientists in how to apply basic and advanced genomics and bioinformatics tools in clinical diagnosis, epidemiology, pathogen surveillance, antimicrobial resistance and drug discovery.

“Access to training in genomics and bioinformatics in LMICs remains a critical challenge limiting capacity for the application and translation of the vast knowledge and diverse biological resources that exist in these regions,” says Alice Matimba, ACSC's Overseas Courses Manager.

## Training as a priority

The ACSC Overseas Courses programme exists to empower regional communities, and is dedicated to building training capacity. As well as its successful *Molecular Approaches to Clinical Microbiology in Africa* course, ACSC have presented the *Genomic and Epidemiological Surveillance of Bacterial Pathogens since 2013* in collaboration with the PulseNet Latin America and Caribbean Network, supported by the Pan-American Health Organisation

(PAHO). This course covers the most important public health issues of transmission of infectious pathogens and drug resistance in the region.

## THE ACSC OVERSEAS PROGRAMME EXISTS TO EMPOWER REGIONAL COMMUNITIES

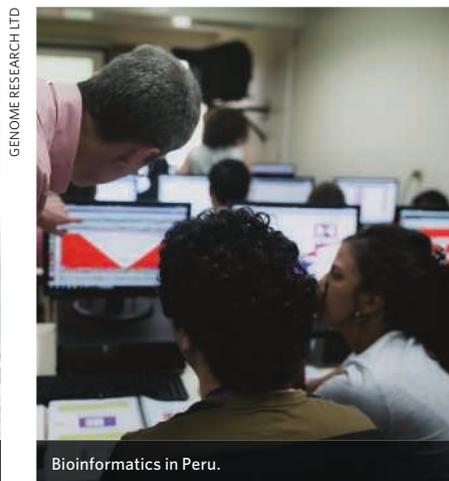
It has trained scientists from many of the national reference laboratories in next-generation sequencing and bioinformatics, and brings together participants and world-renowned scientists to collectively apply their knowledge to tackling these crucial regional issues.

Establishing strong regional collaborations is crucial to widen the reach of training and overcome infrastructure challenges. By working together to foster interactions and build networks, we can help create opportunities for further learning and skills development.

WELLCOME GENOME CAMPUS  
CONNECTING SCIENCE  
ADVANCED COURSES+ SCIENTIFIC CONFERENCES



MinION sequencing in Kenya.



Bioinformatics in Peru.



Malaria microscopy in Thailand.



# ADVANCED COURSES + SCIENTIFIC CONFERENCES 2020

## CONFERENCES

Evolutionary Systems Biology  
12-14 February  
Optimmunize: Improving the beneficial effects of vaccines **NEW**  
19-21 February  
Single Cell Biology  
11-13 March  
Genomics of Brain Disorders  
18-20 March  
Genomics of Rare Diseases  
25-27 March  
Proteomics in Cell Biology and Disease Mechanisms  
30 March-1 April  
Longitudinal Studies  
20-22 April  
Nursing, Genomics and Healthcare **NEW**  
27-29 April  
Antimicrobial Resistance - Genome Big Data and Emerging Technologies  
4-6 May  
Curating the Clinical Genome  
20-22 May  
Healthy Ageing  
27-29 May  
Genomic Epidemiology of Malaria  
7-10 June  
Virus Genomics and Evolution  
15-17 June  
Reproducibility, Replicability and Trust in Science **NEW**  
9-11 September  
Genome Informatics  
14-17 September  
CRISPR and beyond: perturbations at scale to understand genomes  
23-25 September  
Genomic Imprinting - from Biology to Disease **NEW**  
28-30 September  
Exploring Human Host-Microbiome Interactions in Health and Disease  
21-23 October

## COURSES

### LABORATORY COURSES

Genomics and Clinical Microbiology  
19-24 January  
Genomics and Clinical Virology  
23-28 February  
Genetic Engineering of Mammalian Stem Cells  
15-27 March  
Next Generation Sequencing  
20-27 April  
Low Input Epigenomics **NEW**  
12-20 May  
RNA Transcriptomics  
17-26 June  
Single Cell Technologies and Analysis  
24-31 July  
Molecular Pathology and Diagnosis of Cancer  
22-27 November  
Derivation and Culture of Human Induced Pluripotent Stem Cells (hiPSCs)  
14-18 December

### COMPUTATIONAL COURSES

Mathematical Models for Infectious Disease Dynamics  
24 February-6 March  
Fungal Pathogen Genomics  
11-16 May  
Summer School in Bioinformatics  
22-26 June  
Systems Biology: From Large Datasets to Biological Insight  
6-10 July  
Genetic Analysis of Mendelian and Complex Disorders  
15-21 July  
Proteomics Bioinformatics  
26-31 July  
Genetic Analysis of Population-based Association Studies  
21-25 September  
Working with Protozoan Parasite Database Resources  
4-9 October  
Next Generation Sequencing Bioinformatics  
18-24 October  
Computational Systems Biology for Complex Human Disease **NEW**  
6-11 December

### LECTURE/DISCUSSION COURSES

Clinical Genomics: Fundamentals of Variant Interpretation in Clinical Practice  
29-31 January  
Genomic Practice for Genetic Counsellors  
3-5 February  
Practical Aspects of Small Molecule Drug Discovery  
21-26 June  
Evolutionary Biology and Ecology of Cancer  
29 June - 3 July  
Science Policy: Improving the Uptake of Research into UK Policy  
19-21 August  
Genomics for Dermatology  
25-27 November

## OVERSEAS COURSES

Next Generation Sequencing Bioinformatics  
19-24 January (Chile)  
9-14 February (Malaysia)  
Molecular Approaches to Clinical Microbiology in Africa  
21-27 March (The Gambia)  
Genomics and Epidemiological Surveillance of Bacterial Pathogens  
19-24 April (Paraguay)  
Working with Pathogen Genomes  
10-15 May (Vietnam)  
Viral Genomics and Bioinformatics  
7-12 June (Uruguay)  
Antimicrobial Resistance of Bacterial Pathogens  
27 September-3 October (Kenya)  
Malaria Experimental Genetics  
8-13 November (The Gambia)  
Practical Aspects of Drug Discovery  
29 November-4 December (Uruguay)

## ONLINE COURSES

Bacterial Genomes - 4 courses  
Genetic Counselling - 1 course  
*Please see our website for more details and scheduling of online courses*