![Future Learn logo]

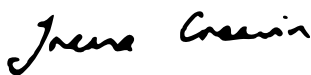# Certificate of Achievement

Subha C

has completed the following course:

BACTERIAL GENOMES II: ACCESSING AND ANALYSING MICROBIAL GENOME DATA USING ARTEMIS

WELLCOME CONNECTING SCIENCE

This online course covered the principles of microbial bioinformatics analysis and comparative genomics. Artemis, an open source genome browser, was used to investigate whole bacterial genomes, and through analysis of bacterial genes and proteins, the genomic features of pathogens were explored.

The Royal College of Pathologists (RCPath) has accredited this course for 15 Continuing Professional Development (CPD) credits. This applies to medical staff and clinical scientists in career grade posts who are enrolled with one of the Royal Colleges for CPD purposes.

Dr Treasa Creavin
Scientific Programme Manager
Wellcome Genome Campus Advanced Courses and
Scientific Conferences

Professor Nicholas Thomson
Group Leader, Bacterial Genomics and Evolution
Wellcome Sanger Institute, Wellcome Genome Campus
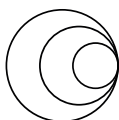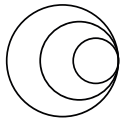
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Accredited by

RCPath CPD Approved

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BACTERIAL GENOMES II: ACCESSING AND ANALYSING MICROBIAL GENOME DATA USING ARTEMIS
WELLCOME CONNECTING SCIENCE

96% OVERALL SCORE

This course covered the principles of microbial bioinformatics analysis and comparative genomics. Using Artemis, an open source genome browser, whole bacterial genomes were investigated: comparisons of reference and draft genomes were made; genome annotation and file formats were shown and together explored, GC (guanine-cytosine) content and the use of this metric to analyse functional blocks in the genome was covered; and Artemis was used to compare two bacterial genomes and their gene content.

STUDY REQUIREMENT
3 weeks, 5 hours per week

LEARNING OUTCOMES
• Collect, access, and download whole bacterial genomes from public repositories
• Investigate and navigate bacterial genomes and their annotation using Artemis
• Identify genomic regions with low/high GC (guanine-cytosine) content, often associated with virulence
• Perform simple comparative analyses between bacterial genomes

SYLLABUS
Week 1

• Multi-FASTA files
• Reference and draft bacterial genomes
• Introduction to Artemis, an open source genome browser

Week 2

• Genome annotation
• Genomic regions defined by GC (guanine-cytosine) content

• Accessing and downloading whole genome sequences
• Pathogenicity islands

Week 3

• Peer-reviewed project: Ecological niche adaptation between two *Mycobacterium* species
• Pseudogenes in *Mycobacterium* species

ACCREDITATION
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