

## **Bioinformatics and Data Science Training**

### **Bioinformatics and Data Science Training for Public Health, Health Security, AMR, and One-Health, and other related field Professionals**

#### **Overview**

This specialized training, offered by MAGMA and Patira, is specifically designed for professionals in the fields of health, health security, antimicrobial resistance (AMR), and One-Health, and other related fields. The training aims to equip participants with essential skills for managing, analyzing, and presenting data relevant to these critical areas. Tailored to enhance decision-making and problem-solving abilities, this training serves as a foundational step towards more advanced studies in bioinformatics and data science within the context of health security and One-Health.

#### **Objectives**

The training encompasses key components such as exploring and presenting data related to bioinformatics, biological databases, genomics resources, and next-generation sequencing. Participants will delve into genomics, RNA and DNA sequence analysis, microbial community analysis, as well as data management and preparation. Additionally, the training includes an introduction to data science, covering aspects like data exploration and preparation, the analytics life cycle, classification and regression, machine learning, and analytics.

#### **Skills and Experience**

Throughout the training, participants will gain hands-on experience in data analysis using common bioinformatics tools and R and RStudio. These powerful tools are widely utilized in the fields of bioinformatics and data science.

#### **Training Duration**

Varies depending on the client's needs.

#### **Mode of Delivery**

Virtual or In-person

#### **Bioinformatics**

- Introduction to Bioinformatics
- Biological Databases and Similarity Search
- Genomics: SNPs, population structure, diversity analysis, etc.
- Transcriptomics: RNA seq data analysis, functional annotation
- Metagenomics
- Others requested by the clients.

#### **Data Science**

- Introduction to Data Science
- Data Management: Exploration, preparation, and visualization
- Data Cleaning: Techniques for handling missing data, data normalization, and transformation
- Analytics Life Cycle Methodology
- Analytics: Descriptive, diagnostics, predictive, and prescriptive.

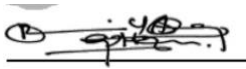
- Machine Learning: Regression and classification methods.
- Data Visualization: Tools and techniques for effective data presentation.
- Ethical Considerations: Data privacy, security, and ethical implications in health data science.
- Project Management: Best practices for managing data science projects.
- Others requested by the clients.

**Goal**

This comprehensive training aims to empower professionals with the necessary skills to navigate the complexities of data analysis and presentation in the fields of health, health security, AMR, One-Health, and other related fields.

**Training fees:** Negotiable

**Prepared by:**



Stephen Obol Opiyo, PhD  
Patira Data Science



Peace Proscovia Aber, MS.  
MAGMA Consultants International