Computational and Systems Biology Workshop 2025

24 – 28 February 2025 | Durban University of Technology, Durban, South Africa

science & innovation
Department:
Science and Innovation
REPUBLIC OF SOUTH AFRICA

International Centre for Genetic Engineering and Biotechnology

DUT
DURBAN UNIVERSITY OF TECHNOLOGY
FACULTY OF APPLIED SCIENCES
DEPARTMENT OF BIOTECHNOLOGY & FOOD SCIENCE

CSBRG
COMPUTATIONAL & SYSTEMS BIOLOGY RESEARCH GROUP

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Background: Computational and Systems Biology is a sought-after research area in bioinformatics and constitutes one of the scarce skills in South Africa. This workshop within the niche of glocal digital transformation and application of artificial intelligence, will inspire innovation and equip postgraduate students and emerging scholars to be competitively relevant in generating new knowledge and solutions in this digital era.
The workshop will comprise scientific presentations and hands-on training to equip the participants with the necessary bioinformatics/computational skills required to generate and mine high-throughput genomic data, encompassing quality control and metagenomic (16S/18S rRNA and ITS) analyses of next-generation sequencing (NGS) data as well as metabolomics and computational bioprospection of both protein and chemical space data with specific focus on three aspects: 3D protein structure modelling; 3D ligand acquisition and their Density Functional Theory (DFT) feature; and advanced molecular dynamics simlation. The presentations will be delivered by well-established bioinformaticians and genomics experts, who will strive to encourage discussion/exchange of scientific ideas, and foster collaboration and networking opportunities. The hands-on sessions will offer training opportunities, where postgraduate students, emerging scholars and other stakeholders would benefit in terms of knowledge transfer and human capacity building.

Themes and topics to be covered:

* An overview of metabolomics workflow & data processing/analysis via MetaboAnalyst
* Introduction to Linux and command lines for new chemical entity bioprospection
* Introduction to Linux and command lines for NGS data analysis
* 16S/18S/ITS metagenomics

Targeted audience and space availability: Postgraduate students and emerging scholars with keen interests in computational and systems biology and or bioinformatics. Only 50 participants would be accommodated, and this would be based on your responses and first come first served basis.

Registration/participation fee: The workshop will be free and postgraduate students from historically disadvantaged institutions are particularly encouraged to apply. However, participants willing to attend from outside Durban must be able to cover their accommodation and transport costs for the duration of the workshop.

Click to apply: https://forms.gle/CqkxUeVuFrcMadUT9

Application deadline: **10 January 2025**