e-infrastructures – Case Studies

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Agenda

Discuss how these e-infrastructures are being utilized.

- **Bioinformatics**
- **Physics**
- **Agriculture**

BIO INFORMATICS

Bio Informatics

Bioinformatics – IST Africa 2016 – Supporting the development of Bio Banks in Low and Medium Countries

Bio Informatics

Background

- A Horizon 2020 Funded Project
- Research Team drawn from Europe (Sweden, France, Austria) and Africa (SA, Uganda, Kenya)

Bio Informatics

The Problem

There are well established Biobanks in High Income Countries (HIC) and a few in Low and Middle Income Countries (LMIC)

Reason – Limited resources and short term funding in LMIC

Bio Informatics

Project Objectives

To facilitate the development of Bio banks (*Organized collections of biological material and data*) in Africa

Bio Informatics

Project Approach

- Collaboration between institutions in HIC and LMIC.
- Share resources, infrastructure and expertise to enable the development of Biobanks in LMIC

Bio Informatics

Resources Shared

- Laboratory Information Management Systems (LIMS)
- Training
- Bio infomatics modules for data management and analysis

Bio Informatics

The process

- The organization registers
- The individual registers
- Access to resources is granted.

PHYSICS

Physics

Computational Materials Science Group
University of Eldoret

http://uoeld.ac.ke/cmsg/index.html

Physics

The Computational Materials Science Group (CMSG) focuses on problems dealing with modeling aspects that support experimental Solid State Physics, Materials Science, Genomics, among other multidisciplinary scientific aspects.

Physics

Composition:

Faculty and Postgraduate Students

Physics

Technology:

HPC facilities in SA and Onsite – University of Eldoret (set it up themselves)

Physics

More Details:

Dr Philip Nyawere – Rongo University College

AGRICULTURE

Agriculture

Open Science Grid -
http://www.opensciencegrid.org/predicting-agricultural-impacts-of-large-scale-drought/

Predicting Agricultural Impacts of Large-scale Drought

Agriculture

Predicting Agricultural Impacts of Large-scale Drought

The researchers undertook a model-based assessment of the 2012 US growing season using the parallel System for Integrating Impact Models and Sectors (pSIMS).

Agriculture

Predicting Agricultural Impacts of Large-scale Drought

The system is a high performance computing framework that fused independent climate and agriculture models at large scales, producing 5-arcminute spatial resolution (about 10 km) simulations.

Agriculture

Predicting Agricultural Impacts of Large-scale Drought

The Open Science Grid provided easy access to compute resources an order of magnitude larger than they could get from campus clusters.

Agriculture

kenet
Kenya Education Network

The Open Science Grid

http://www.opensciencegrid.org/

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Q&A

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Transforming education through ICT

Thank You

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