

VIRTUAL MALARIA INSTITUTE

Workshop
University of Pretoria
2005

MALARIA RESEARCH PROGRAM-UP

- Projects:
 - Biochemical properties of several enzymes in the polyamine and folate metabolic pathways of the human malaria parasite, *P. falciparum*
 - Aim is to validate targets and discover parasite-specific features that can be exploited for therapeutic intervention strategies
 - Gene expression profile of the malaria parasite under selective drug pressure
 - MOA of antimalaria plant compounds & inhibitors
 - Polymorphism of parasite antigens and population genetics

- Methodologies:
 - Structural modeling, mutagenesis, activity assays, protein-protein interactions
 - Homology modeling and molecular dynamics
 - Synthesis of genes and recombinant expression
 - Expression profiling with SSH and DNA microarray
 - Proteomics
 - Bioinformatics
 - Sequence analysis (nt & aa), motif identification
 - Algorithm design
 - Databases, pipelining and web interfaces
 - Microarray data analysis (annotation & metabolic pathways)
 - Microsatellite and SNP analysis
 - Combinatorial libraries and drug design
 - In vitro screening of parasite cultures and gene-complemented yeast strains (plant compounds)

Funding

- NRF Innovation Fund
- NRF German-SA Scientific Cooperation
- NRF Economic Growth and International Competitiveness
- NRF Unlocking the Future
- MRC (pending)
- WHO/TDR, Wellcome Trust (Planning stage)
- National Bioinformatics Network

Networking

- Prof Rolf Walter, Bernard-Nocht Institute for Tropical Medicine, Hamburg
- Prof John Hyde & Dr Paul Sims, University of Manchester (formerly UMIST), Manchester
- Prof Sanjeev Krishna, St George's Hospital Medical School, London
- Prof Carol Sibley, University of Washington, Seattle
- Dr Angelina Angov, WRARI, Washington
- Prof Peter Folb (UCT/MRC)
- Prof Marion Meyer (UP)