

T1

## **How to sequence small country**

Sidra Medical and Research Center

### **Abstract**

Sidra Medical and Research Center is an ultramodern, all-digital academic medical center which will set new standards in patient care for women and children in Qatar, the Gulf region and internationally. It encompasses three essential missions: World-Class Patient Care, Medical Education and Biomedical Research. Sidra Division of Biomedical Informatics is designed from scratch and deployed ahead of Basic Science, Clinical and Translational research divisions. Bioinformatics research and development is supported by state of the art high-performance computational platform. Sidra HPC has been custom designed for Genomics and Big Data Analytics, it's characterized by high RAM per core ratio, large multi-tier storage and three dedicated cluster interconnects optimizing high volume data traffic.

We are perfectly equipped to take on the most serious challenges in Computational Biosciences. The largest challenge we face comes from the Qatar National Genome Project. The goal is to obtain high-depth genome sequence of every Qatari citizen, projected 300,000 genomes in five years. The pilot stage, designed to establish the experimental protocols and analysis pipelines involves sequencing and annotation of up to 3,000 genomes. The purpose of the National Project is not limited to analysis of genome sequences. It is undertaken in parallel with upgrading the National Healthcare system to a unified standard of Electronic Medical Records. The future National Healthcare System will be based on precise genome sequence information interlinked with EMR database. The Sidra iTRIP platform is designed to integrate EMR and Genome information in order to pave the way from academic research to practical application of genomics in day to day work of healthcare practitioners.

Standing up to such challenge requires a team of the best Bioinformatics Scientists working in accord with a wide spectrum of talented professionals from Computational Science to Experimental Biology and Clinical Medicine. We would like to invite our junior and mature colleagues to join our quest as collaborators or employees in roles varying from postdoctoral to principal investigator.