

LABORATORY INFORMATICS



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Diary Dates

14 June

ACD/Labs Informatics and Knowledge Management Symposium
 Berkshire, UK

17-20 July

11th International Workshop on Bioinformatics and Systems Biology (IBSB)
 Berlin, Germany

25-27 September

11th Annual ELNs and Advanced Laboratory Solutions
 Milan, Italy

1-3 October

Global Biobanking 2012
 London, UK

9-12 October

Pathology Informatics 2012
 Chicago, US

30-31 October

Indian Lab Automation
 Mumbai, India

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IN BRIEF

- ▶ IDBS partners with Intellectual Property and Science division of Thomson Reuters
- ▶ Starlims builds its LIMS business in Europe and emerging markets in Latin America and Africa
- ▶ Japan's National Institute of Genetics (NIG) deploys Aspera's web-based Connect Server
- ▶ Renowned university medical centre goes live with Labvantage LIMS

Gene genies target new profits



Speaking to *Scientific Computing World*, EMC Isilon's **Rob Anderson** discusses the rise of genomics

We have witnessed a significant shift in the market where pharmaceutical companies have been investing heavily in technology for genomics. Within the realm of European life sciences research, EMC Isilon had initially seen interest almost exclusively from the educational sector and public sector research organisations, but now there is tremendous interest from the pharmaceutical sector in genomics, proteomics, etc. We are also seeing public/private partnerships where the pharmaceutical sector sponsors genomics research inside publicly-funded research bodies.

Many years ago, the pharmaceutical sector found investment in genomics to be unfruitful, but the economics have changed, the science has moved forward and the pharmas have re-entered the sector in a big way.

Pharmaceutical companies face big challenges with the cost and risk introduced by heavy regulation of their industry. Every year it becomes more difficult to develop drugs profitably. The industry model has been based on discovering 'blockbuster' drugs whose profits pay for many years of expensive R&D. But that model is breaking down because the blockbuster drugs have to work for the entire population, and there is a risk that these drugs can have side-effects and invite legal challenges as well as more regulation.

In searching for a new way forward, these companies will take into account very long timeframes; patent lifetimes are decades so these companies have long-term strategies. Customised drug development and big-data analytics

on electronic health care records offer the possibility of making drugs very precisely and targeting them to specific subsets of the population. Risks of side-effects are dramatically reduced. Gene therapies can be extremely precise. Because of these potential benefits, the pharmas are investing now to ensure the technology and solutions are in place to transition from an experimental, 'wet-lab' world

newer genomics facilities experiment with doing sequencing in the cloud and productising sequencing services where pricing varies by the deadline required. Sequencing companies are hoping to benefit from these transitions. It is important to remember that established players in bioinformatics may not be ready to move to public cloud deployments, as moving existing petascale datasets into the cloud runs

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to a precision of a digital, 'drylab' environment. The much spoken-about era of the \$1,000 genome is almost upon us – we are around \$3,000 to \$5,000 currently. Sequencing rates are significantly faster than Moore's law so we'll hit the \$1,000 genome within the next two or three years. We are also much better at storing and searching patients' digital information. All of these technologies are going to transform medicine over the next decade.

Single molecule sequencers, which form a new generation of sequencing technology, are much better adapted to grid computing and to the data centre in general. They are custom-designed for massive parallel sequencing of vast amounts of data, which is the way things will be done in the cloud. Diagnostics-as-a-service is not a new idea and is more advanced in the USA. Some of our customers like Complete Genomics have seen real successes in this field. We are seeing

into the challenges of physics.

Despite this, there will continue to be huge interest in developing private sequencing clouds, particularly for institutes where there is an unending demand for sequencing throughput. A lot of our customers are looking for scalability and power but want things to be easier. Illumina, one of the biggest names in sequencing, partnered with us years ago to provide a solution called IlluminaCompute, a turnkey sequencing solution designed for users who want to focus their resources on the research, not on managing the ICT required to support the research. This type of solution has led to sequencing moving into areas where ICT expertise is thin on the ground but demand for sequencing is high, such as hospitals and small to medium-sized research institutes. We've watched how the market has transformed and gone much more horizontal, thanks to solutions like this.