

## Bioinformatics gears up for 2013

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What we will see in 2013 is that computing, algorithms, and mathematics are being used as microscopes; mining through gigabytes of omic data. Using these technologies we will proceed towards predictable medicine, precision agriculture, high yield crops, and economic biofuel much faster. As a company, Geschickten Biosciences is already designing computer algorithms for cancer research and disease resistant crops. In early 2013, we expect to start working on immunogenetics, pharmacogenomics and biofuels. We have invested substantially in pharmacogenetics and personalized medicine techniques, which we expect will give us returns by end of 2013. We also plan to integrate a flavor of mathematics with computational genetics to develop a technique called "DNA Signal Processing", which we believe will help revolutionize the understanding of the information content in a DNA for better disease management.

- Dr Asoke K Talukder, chief scientific officer, Geschickten Biosciences

We can see a tremendous growth in pharmaceutical sector as many of blockbuster molecules expired in 2011-12 and pharmaceutical industry is again gearing up to discover new molecules as well as collaborating with small and medium size R&D partners for fastening the discovery process.

As far as 2013 is concerned, we are initiating our own R&D projects from January 2013 for discovering lead molecules. We are planning to diversify our business in cosmetology, food and agriculture sector soon by partnering with prominent players in these sectors. We are hoping to show success in 2013 with new molecules in market.

- Mr Sahil Kapoor, director and cofounder, head, Global Business Operations, Novo Informatics

2013 will see a renewed interest in high-throughput technology, like next-generation sequencing, in the fields of clinical diagnostics, crop improvement, biodiversity and renewable energy. While the West is embracing high-throughput sequencing in the clinics, India will not see it in the years to come. This is due to less than adequate public spending in technology platforms in government-run hospitals and in training manpower who can use such technology, lack of proper regulatory framework for molecular diagnostics tests, unaffordable price points for diagnostics tests based on high-throughput technology platforms and questionable clinical utility of many of the tests using such platforms. While the clinical arena will be the most-talked about in the coming year, the real beneficiary will be the field of agriculture, including crop improvement and species identification.

The private sector in India will not see any of the cutting-edge tools anytime soon due to its unwillingness to invest in basic research and lack of knowledge on how to use the high-throughput technology. But the good news is that with a country of our size, potential and aspirations, there is no escaping to making basic discoveries first before moving to clinics or agricultural fields. Hence, it is just a matter of time before new technology will make inroads into both the industrial and government-run labs.

We, at Ganit Labs, will slowly but surely move to see our research play a direct role in the clinic and in the field of applied biotechnology in the coming years.

- Dr Binay Panda, head, Ganit Labs