

Software helps human science

Cape Town firm Electric Genetics – South Africa's only bioinformatics company – is achieving success with its software designed to analyse human genome data. Bioinformatics is the science of analysing biological data on computers to accelerate biological, genetic and medical discoveries. While competitive biotechnology organisations abroad would not embark on research without a strong bioinformatics infrastructure, local scientists working in the field have yet to embrace this necessary enabling technology, or to understand the power it has to accelerate their discovery efforts in order to compete internationally. Founders of the South African National Bioinformatics Institute (Sanbi) professor Win Hide and Electric Genetics MD Tania Broveak-Hide, hope to provide a necessary boost to South Africa's fledgling biotechnology industry by providing bioinformatics tools and expertise to local efforts. The company supplies academic institutions with its products at no cost, and participates actively in provincial and national activities that promote the growth of entrepreneurial biotechnology and information technology business. "We are fortunate to be in the unique position, through our technological expertise and experience in the silicon valley biotechnology scene, to provide significant input into the development of biotechnology in South Africa," says Broveak-Hide.

In addition to being an internationally-recognised leader in bioinformatics research, Sanbi is also responsible for training the country's scientists in the use of bioinformatics and providing a national computer server and bioinformatics infrastructure for use by academics countrywide. By replicating itself, through satellite nodes in all South Africa's academic institutions, the institute hopes to reach the greatest number of biological researchers and have the greatest impact on South Africa's growing biotechnology efforts. Bioinformatics technology developed at the company and the institute has already proved instrumental in several key scientific discoveries, domestic and abroad. The company's flagship product, the Sequence Tag Alignment and Consensus Knowledgebase was used in the discovery of the gene for retinitis pigmentosa, one of the most common causes of blindness. This product, and other developments under way at Sanbi, are implemented in collaborative research efforts between the institute and other South African organisations to speed the way to large discoveries about the nature and treatment of diseases such as diabetes, tuberculosis, malaria and HIV/Aids.

Growing from the need to commercialise technology developed at the University of the Western Cape, Electric Genetics secured a Innovation Fund grant from the Department of Arts, Culture, Science and Technology in collaboration with Sanbi. The grant enabled the partners to increase research staff and develop a software tool that helps researchers understand the genetic nature of disease. Continuing to work closely together even after conclusion of the grant, the two parties share physical space on the university campus. "Not only does the relationship bring significant royalty income to the university, but we believe firmly that this proximity of academic and industry efforts has been instrumental in ensuring the company's products are technologically ahead of the curve in the fast-moving discipline of bioinformatics," says Broveak-Hide. The formula has proved so successful that the company was acknowledged as the top research and development company in Business Week's Technology Top 100 awards last November. The two organisations see themselves as role-models for successful development of biotechnology in South Africa, and work actively to promote and develop biotechnology throughout the country.