

## Take a walk on the genome

Vivienne Baillie Gerritsen

What? No issue in July? A number of our regular readers may have noticed that – for the first time in a short decade – no article appeared during the month of July. And time has only just given us the opportunity to squeeze one into a month of August about to end. What happened? 2008 marks the 10<sup>th</sup> anniversary of the Institute. About a year ago, we pondered on the idea of conceiving an exhibition which would not only celebrate this little milestone but would also present the world of bioinformatics in as attractive a way as possible to non-scientists. It was not an easy task. For many, the word ‘bioinformatics’ is as sexy as the word ‘pots’, and the work carried out is as attractive as the bottom of a cake tin. Despite this and thanks to a year’s collaboration with scientists, writers and graphic designers – and the financial support of a few sponsors – our exhibition ‘*Chromosome Walk, a saunter along the human genome*’ is about to celebrate its opening, on September 1<sup>st</sup> in Geneva’s botanical gardens.



It all started in May 2007 when we thought that it might be amusing to imagine an outdoor exhibition where visitors could stroll – one way or another – along the human genome and, in so doing, discover the world of DNA, proteins and bioinformatics. Our first idea was to make the exhibition 3 kilometres long thus representing the 3 billion base-pairs which make up the human genome. The best distance available in Geneva for such an endeavour was the edge of

the lake – a walk which would take the visitor from the Museum of the History of Science to the botanical gardens a little way down the road.

We presented our project to the botanical gardens who were very enthusiastic but rapidly demonstrated that an exhibition which spread over such a distance presented a number of drawbacks. Not everyone is keen to walk so far for the sake of culture, and after a panel or two, they would probably lose interest and peel off the track to enjoy the lawn. What is more, how do you make people start at the beginning of the exhibition? Anyone out for a Sunday afternoon walk saunters down from any part of the park. What if they bump into panel no.11? Are they going to walk back to panel no.1? Probably not. The major drawback though was the World Trade Organisation. This majestic building poised on the lake’s edge was built between the two museums. And when it organises conferences, the part of the lake it faces is shut down and no one is allowed through. This would have cut our exhibition into three, the middle bit of which would have been out of bounds.

So we opted for an exhibition that would be mounted on the grounds of the botanical gardens only, where – in a classical fashion – the point of departure is also the point of arrival. Like old ways though, obsessions die hard. The exhibition could not cover the distance of an unravelled genome but surely there were other ways of expressing DNA quantity and length?

We agreed upon creating 23 different panels to illustrate the 23 pairs of chromosomes found in the nucleus of most of our cells. Each panel could have a different size reflecting the size of the chromosome... Or panels could be placed in such a way that the distance between them is proportional to the amount of DNA in a chromosome... And if helium-filled balloons were fixed onto each panel, the length of the string holding them could be proportional too. And the balloons themselves could echo the size of a chromosome... There was no end to our imagination. However, our imagination turned out to be costly in many ways and it took the patience and subtle persuasion of a graphic designer and some understanding on behalf of eager scientists, to realise that the quantity of DNA in chromosomes was of sweet indifference to the layman. And in time, the idea was abandoned altogether.

Once the basics of the exhibition had been agreed upon – i.e. 23 panels for the 23 pairs of chromosomes plus an introductory panel – all that was needed was to find what we were going to put on them. It seemed pretty straightforward in the beginning but things are rarely so simple. The following months witnessed a fierce battle in the name of Science and how to express it. Eager to see the positive side of things, it was a unique opportunity to fine-tune the concept of ‘popular science’. It started out as an interesting experience, where it was discussed how to say things best by tossing concepts, adjectives and commas into the air. However, the discussing soon became a form of polite controversy and more often than not the end result lay in a non-man’s land of vocabulary, syntax and grammar where both the scientists and the writers felt fairly satisfied though neither were really convinced.

More often than not, scientists would introduce an obscure concept using words only known to

themselves to which they would add nuances and exceptions which harvested confusion. The next step was to shed light onto the darkness. It was fun and creative to begin with but, in the long run, the process became tedious, infuriating and nerve-racking, though also comical. In an attempt to see the bright side of things, every one was making an effort to understand the other. However, good nature has its limits. And dark clouds accompanied by claps of thunder and flashes of lightening occurred regularly.

In spite of this, or indeed thanks to this, our exhibition has turned out to be an elegant succession of colourful and informative panels from which float graceful helium-filled balloons in the shape of chromosomes. Each panel presents one human chromosome and a number of genes found on it. It then goes on to illustrate an aspect of the world of DNA, proteins and bioinformatics, and there is even a special space reserved for children. So, by the end of the exhibition, visitors should have a fair idea of what genes and proteins are, and how bioinformatics has helped in their understanding.

The exhibition turned out to be a huge project and it has been worth it. This said, we are still seeking for sponsors. Indeed, some have been very generous but we haven’t managed to cover the costs yet. After Geneva, the exhibition will be going to Lausanne, and a number of institutions in England and the United States of America have already expressed an interest. Besides the layman, the exhibition is also a great way of introducing the world of biology and computer science to adolescents seeking future careers. And it is our sincere hope that our *Chromosome Walk* will not only help many understand the minute world that is the basis of Life but that it will also trigger off a few callings.

### **If you would like to find out a little more...**

...**about the exhibition:** <http://www.expasy.org/prolune/chromosomewalk/>. It’s all in French for the time-being, but it will be in English soon.

...**about the Institute’s 10<sup>th</sup> anniversary:** <http://www.isb-sib.ch/SIB10/>.