Meet me in St. Louis

Chris West, of the Centre for Plant Sciences, University of Leeds, used a travel grant from the Biochemical Society to attend the 9th International Plant Molecular Biology (IPMB) Congress in St. Louis.

We flew into Chicago and travelled by train through 300 miles of the grain belt to St. Louis, the home of Monsanto’s agricultural research. The IPMB congress is one of the biggest plant molecular biology meetings where you can see cutting edge research in a wide range of aspects of plant biology. At this conference, Monsanto had the opportunity to showcase some of their technology, including a genetically improved maize cultivar that provides drought resistance which has the potential to increase yields in the US and in the developing world.

Science highlights included some excellent plenary lectures, including another tour de force from David Baulcombe, following on from his plenary at the previous conference 3 years ago in Adelaide. Graham Moore and Phil Benfey also gave particularly captivating talks on chromosome paring and hormonal control of root architecture respectively. Other interesting sessions featured the cell cycle, DNA repair and, on the final day, a session devoted to Future Genomic and Transformation Technologies, with various approaches proving successful in developing gene targeting in plant species.

I presented work on a gene that is essential for plant fertility and which is linked to both repair and replication of DNA, although we are still working out exactly how. My current research focuses on the mechanisms and regulation of recombination in plants. We are investigating the different roles played by illegitimate and homologous recombination in the model plant Arabidopsis thaliana. For example, meiotic homologous recombination is required for fertility and our recent studies have identified a novel gene essential for this process in plants. We have also found that higher plants possess a novel extremely fast pathway for illegitimate end-joining and that differs mechanistically from the highly conserved end-joining pathway common to all eukaryotes. Recombination mechanisms are of biotechnological importance as they determine the nature of transgene integration into the genome of genetically manipulated plants. Improved transformation methodologies will allow targeted gene insertion with high precision, producing more reliable transgenic crop species. Also, knowing how plants repair genome damage inflicted by environmental stresses will help us to develop stress-resistant plant lines and help preserve plant germplasm for future generations.

The travel grant enabled me to attend the conference where, in addition to seeing the latest developments in plant sciences, I was also able to make new contacts and catch up with some old friends too. Chicago was an incredible city, with amazing architecture, museums and art, including the Cloud Gate sculpture in a park in the city centre, shown in the photograph. I would like to thank the Biochemical Society for making it all possible.