Relative genome size of vascular plants through geological time

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The relationship between cell size and genome size in animals is regarded as ubiquitous and has long been used to reconstruct the genome size of extinct animals. A growing body of work indicates that the same relationship holds in vascular plants and that there is a particularly strong relationship between stomatal size (guard cell length) and genome size. The highly recalcitrant chemistry of plant cuticles results in high-fidelity preservation, offering the opportunity to examine changes in plant genome size through geological time and from these data infer how these changes in genome size have influenced plant evolution.

This presentation will integrate experimental data with palaeobotanical data to elucidate the relationship between guard cell length and genome size. This information will then be used to discuss key events in the evolution of vascular plants from a genome size perspective.