Interview with

Alexis Maizel

What does your lab work on?
My lab studies the mechanisms of lateral root morphogenesis in Arabidopsis. We combine molecular genetics, cell biology and microscopy to understand how these new roots are robustly formed.

Tell us about the key findings from your recent article in Plant Direct.
This article links to another interest of my lab: the role played a trans-acting small interfering RNAs (ta-siRNAs) in controlling root growth. The production of such ta-siRNAs from their TAS3 precursors is triggered by the micro RNA miR390. In this article, we report that miR390 is expressed in the transit-amplifying compartment of the root meristem where it modulates response to exogenous auxin. The expression of miR390 in this region of the meristem depends on ARF5/MONOPTEROUS.

How did you get the idea to do this study?
Comparatively, we know a lot about what miRNAs control but little about how they are themselves transcriptionally controlled. Nothing was known about the cis-regulatory elements that govern the precise expression of miR390 in the root meristem and the lateral root primordia. We decided to map the promoter to test whether distinct enhancers could be identified.

What do you plan to do next, based on these current findings?
Better characterise the gene regulatory network at play in the basal meristem.

How was your experience with publishing in Plant Direct?
The manuscript had been submitted to The Plant Cell. The post review decision made clear that although solid, the story would be a better fit for Plant Direct. The transfer of the manuscript and reviews was seamless and a decision to publish reached within days. It was a very efficient and professional process.

Publication Spotlight