Transient Transformation of Plants via Nanofibers
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PURPOSE
Produce nanofibers to use for delivery of DNA-encoded reporters, probes and other small molecules and exemplify their application as fiducial markers.

METHODS
Figure 1: Set-up of robotic fiber optic microscope to enable iterative imaging of fluorescent peptide movement, plant growth, and signaling.

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REFERENCES

NANOFIBER DELIVERY MECHANISM
Figure 3 Using nanofibers to deliver non-permeable single probe into plant cells.

DNA & DYE DELIVERY VIA NANOFIBERS
Figure 4. Use of fibers to introduce DNA expression constructs or dye into different plants and organs. A-C, a green vacuolar marker from a small plasmid was delivered into the indicated plant leaves and fruit. D, a large plasmid with a sensor for cGMP (FlincG) was successfully introduced into roots. E-F, lucifer yellow was successfully introduced into a lettuce leaf and tomato fruit, respectively.

SUMMARY
- Designed and fabricated nanofiber arrays with varied pitches
- Demonstrated the utility of the nanofibers with several species