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FIRST PERSON

First person – Sophie Johnson

First Person is a series of interviews with the first authors of a selection of papers published in Biology Open, helping early-career researchers promote themselves alongside their papers. Sophie Johnson is first author on 'A Year at the Forefront of Engineering Photosynthesis', published in BiO. Sophie is a PhD student in Jane Langdale's lab in the Department of Plant Sciences, University of Oxford, investigating plant development and improving photosynthesis.

What is your scientific background and the story of how you got to where you are today?

I studied biochemistry as an undergraduate and then did a master's project with the Langdale lab on vein patterning in monocots. I'm now continuing this work for my PhD and am currently in my second year.

What is the most important take-home message of your Review?

The take-home message of the Review is that photosynthesis engineering strategies have real potential to improve crop yields. There have been some really exciting developments recently, synthetic biology approaches in particular – where new biological pathways are designed, created and implemented – could generate some revolutionary results in the future.

"…photosynthesis engineering strategies have real potential to improve crop yields."

What do you feel is the most important question that needs to be answered to move the field forward?

It's clear that engineering approaches targeted to photosynthesis can improve crop yields, but now it's essential that engineered crops are tested rigorously in different field conditions. For example, although *ictB* expression in maize led to increased yield, as described in the Review, Koester et al. (2021) also reported variation in effect size across locations and growing seasons in field trials. A thorough understanding of the interaction between photosynthesis, metabolite partitioning to grain, and the environment will also be important for designing robust future strategies.

What changes do you think could improve the professional lives of early-career researchers?

I think good mentorship and a supportive lab environment can make all the difference for early-career researchers: ensuring early-career researchers have access to mentors with different perspectives could improve their professional lives. There are also some exciting initiatives for early-career researchers, and I think it's important that more researchers are aware of them and are supported if they decide to engage with them.

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Sophie Johnson

What's next for you?

Hopefully finishing my PhD! And then I'd love to do a postdoc in a related field.

References

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