

SCISOC SPOTLIGHT

BY THE CAMBRIDGE UNIVERSITY SCIENTIFIC SOCIETY

Dr. Gareth Steed

DEPARTMENT OF
PLANT SCIENCES,
SCHOOL OF
BIOLOGICAL
SCIENCES



RESEARCH FOCUS:

CIRCADIAN SIGNAL
TRANSDUCTION IN
PLANTS

I am currently working as a post-doctoral research associate looking at the **role of the bZIP transcription factors** in transducing sugar signals to the Arabidopsis **circadian clock**. In plants the circadian clock is **important for synchronising biochemical and physiological processes with the external light dark cycle**. This is important because the correct synchronisation of internal and external rhythms leads to an increase in yield traits. We know that the major product of photosynthesis, **sucrose, relays metabolic timing information to the central circadian oscillator** but we are unsure of the precise mechanism. The aim of my project is to **fully elucidate this signalling pathway and to understand the role of the bZIPs**. Our hope is that a better understanding of this pathway will allow us to **identify potential breeding targets** in crops and thus contribute towards an **increase in yields** which is desperately needed.

WHY RESEARCH?

Prior to starting my PhD I spent 4 years working as a secondary school science teacher. Whilst I thoroughly enjoyed being in a classroom, I missed the intellectual stimulation that comes from doing lab-based research. As an undergraduate studying at the University of Surrey I was fortunate to have lectures specifically on the circadian clock which I found fascinating and when the opportunity came up to complete a PhD investigating the wheat circadian clock at Cambridge I jumped at the chance. I have continued onto a post-doc because I enjoy being in the lab and the problem solving that comes with research, things often don't work!



"Follow your interests; when things aren't working, it's the intrinsic interest in what you're doing that keeps you going."

ONE PIECE OF ADVICE...

"I learnt that I enjoyed being in the lab during my undergraduate degree by spending my third year on industrial placement with a large pharmaceutical company. I think for any student thinking of a career in research if you get the opportunity to spend time doing a work placement do it because you will learn what you like and (almost more importantly) what you don't like. Finally, don't be afraid to get things wrong. Research can be super frustrating at times, you are doing something where you don't know the answer and often you don't even know how to get to the answer but that makes it all the more satisfying when you do get things right."