

CAREERS IN STEM WEBINARS

ROLE MODEL SERIES – Giving students the opportunity to meet Australian scientists and engineers



Dr Hannah Robinson & Assoc Prof Charlie Warren

From little things, big things grow!

16 November – 11.30am (AEDT)

Here are a few activities related to our speaker's work. You can choose to do these either before or after the talk.

Visit this webpage to get an [Overview of the Nitrogen cycle](#). What's the important organism in getting nitrogen to the living world part of the cycle?

What is the chemical created to "fix" the Nitrogen from the atmosphere?

How can we test that a nutrient is limiting or non-limiting in an ecosystem?

What is one negative effect of excessive nutrient runoff, including nitrogen?

How does this impact oxygen availability in an ecosystem?

This next article gives an introduction to plant breeding and it's history [Introduction to & Basic Concepts of Plant Breeding: Plantlet](#). A scientist called Allan Fritz talks about how plant breeding is like art. What skills in the breeding process could be consider artistic rather than scientific?

List three effects of crop breeding that would be useful and why.

List three effects that could be undesirable in crop breeding and why.

This article is an introduction to Barley that Hannah works with. [Barley | Description, Nutrition, Uses, & Facts | Britannica](#). What differentiates the two types of Barley and what they are used for?

List three advantages Barley has that makes it grow in lots of locations.

These next two pages are on Australia's production of Barley and Malt. [Barley - Barley Australia](#). What areas of Australia have the highest production of Barley?

List the top three countries that are markets for Australian Barley.

Can you see anything in this page that would explain the Japanese market?

[Malt - Barley Australia](#)

How is Barley changed in the malting process?

Why do you think this helps with taste when it is used in foods?

What percentage of malt produced in Australia is used here?

Watch the video and think about all the steps that are performed to enable the cross breeding of barley: [Crossing - International Barley Hub](#). Why do you think they are performed in this order?

Do you think there is a reason this is performed by hand?

Can you see any way that it could be automated on a larger scale?

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