

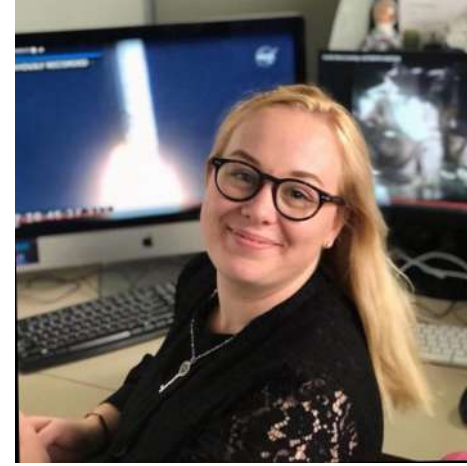
# Swinburne Youth Space Innovation Challenge

Dr Rebecca Allen  
Acting Co-Director, Swinburne Space Technology and Industry Institute

# SHINE

In 2017, we began our journey to space

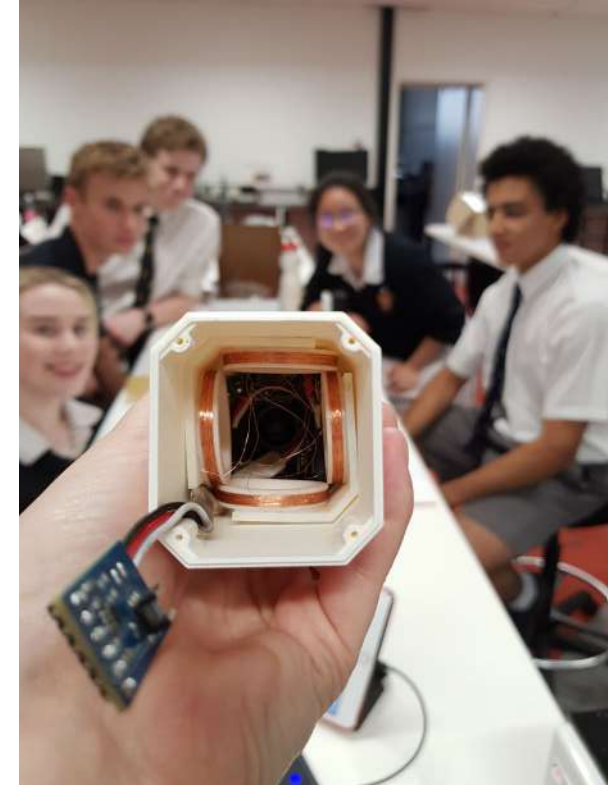
- University staff worked with American program, QUEST, to design a new and innovative program for University and High School students
- University students want access to space experiments
- University staff want to perform experiments and teach
- High School students love space 😊



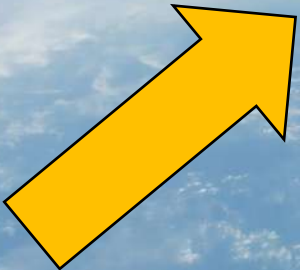
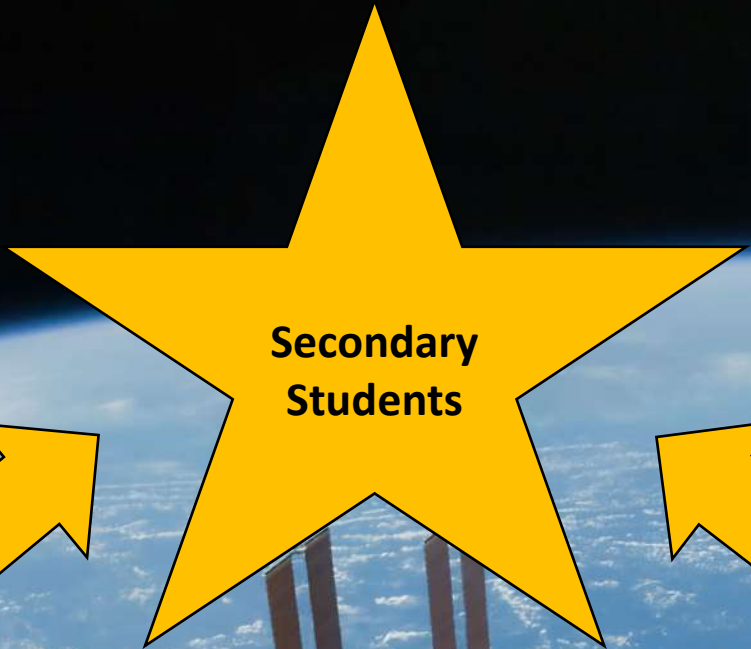
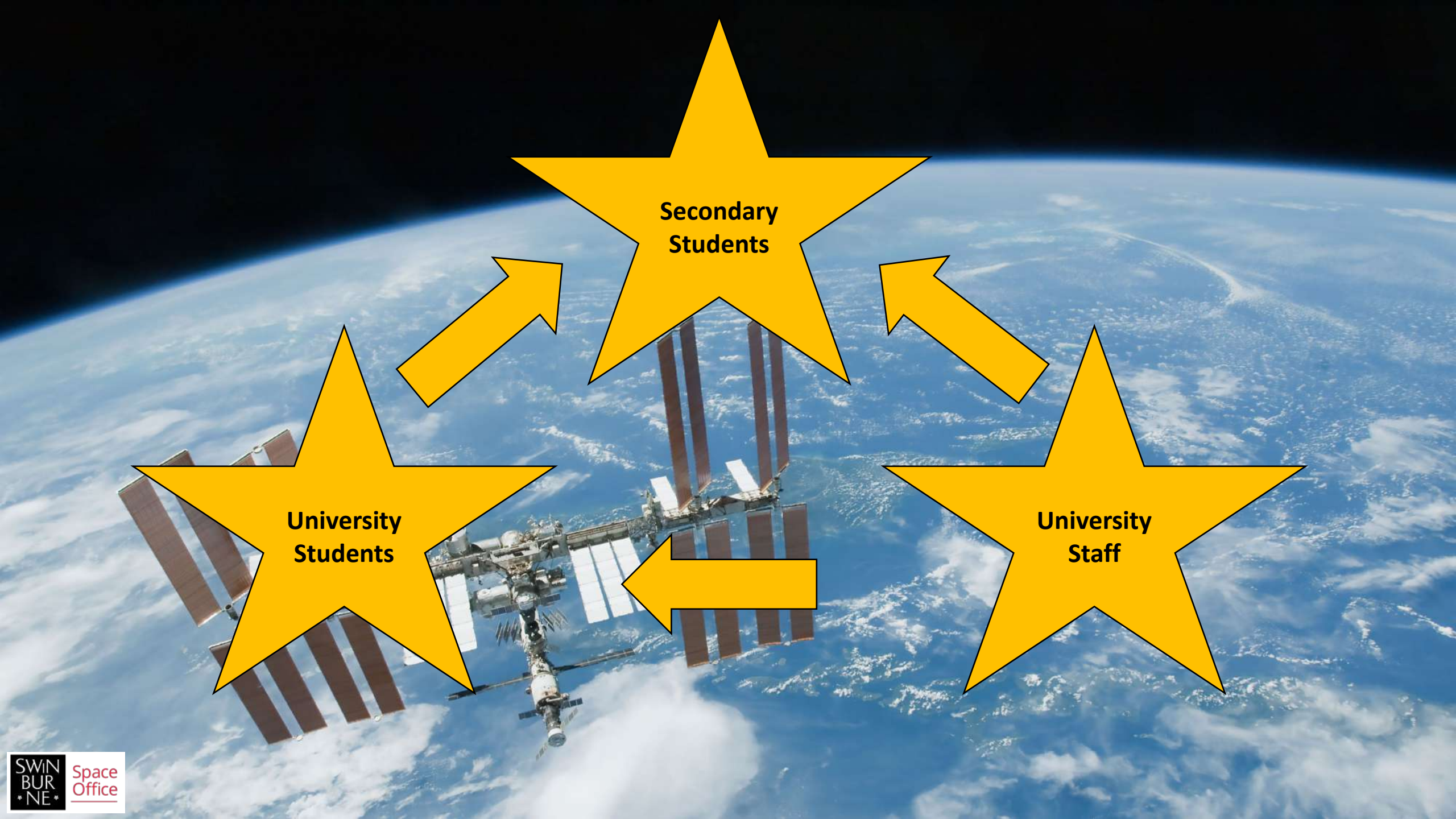
# SHINE

## Hands-on for everyone

- University students (undergraduate and postgraduate) mentor and staff (across science and engineering) mentor teams of secondary students.
- Students have control, they design, build and test the experiment, applying their STEM skills while learning about a career in space.
- Experiment launches to the ISS and returns after a month in space.



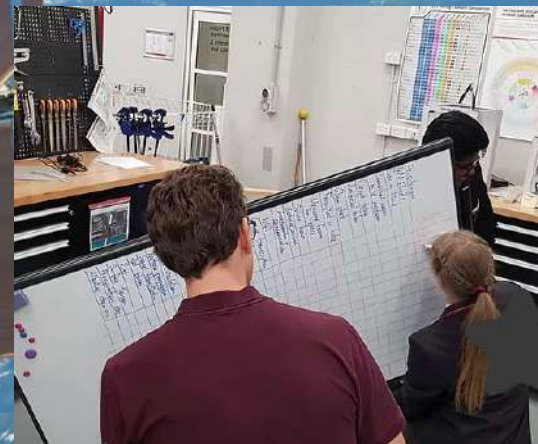
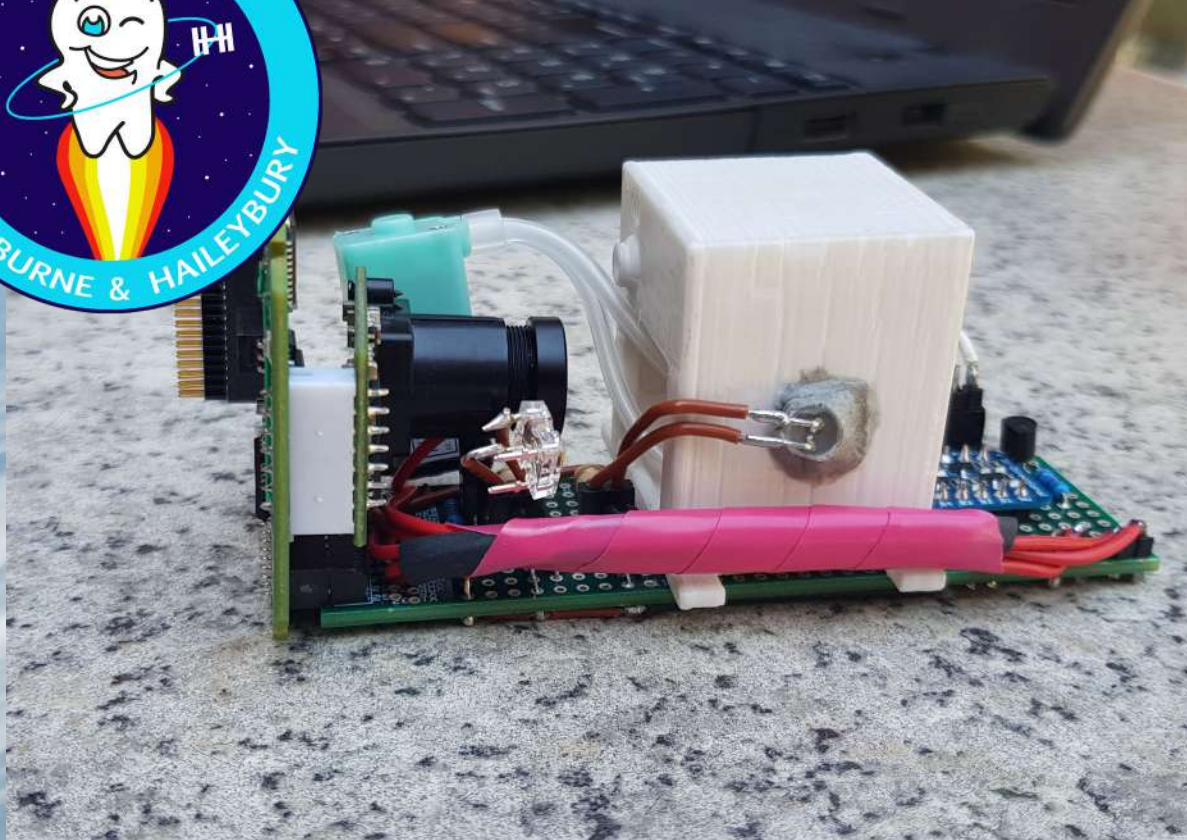






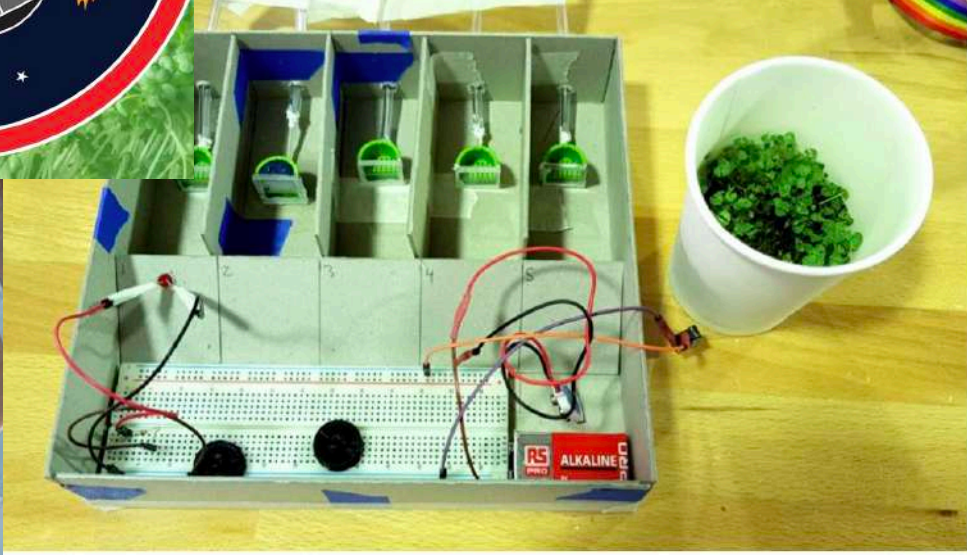
# SHINE 2: Team Micro-Cavity (2018/19)

## How does a tooth decay in Space?





# SHINE 3: Team Sproutstronauts (2019/2020) Growing Chia in Space



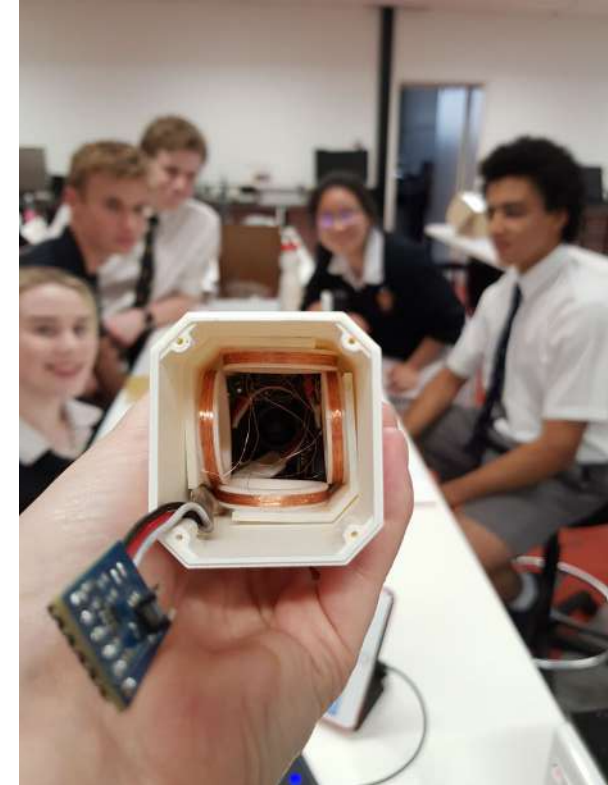
# SHINE

## Hands-on for everyone

- University students (undergraduate and postgraduate) mentor and staff (across science and engineering) mentor teams of year 10 high school students.
- Students have control, they design, build and test the experiment, applying their STEM skills while learning about a career in space.
- Experiment launches to the ISS and returns after a month in space.

## Challenges

- Students must work during school year
- Short (~6 months) time to complete complex experiment
- Students work at Swinburne... but not during a Pandemic
- Program cost
- International space policies





# Youth Space Innovation Challenge

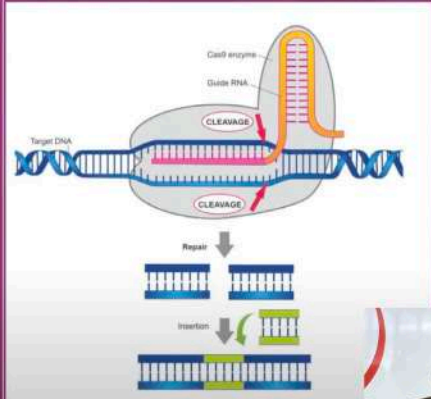
In 2021 we introduced our pilot program to scale-up involvement to additional schools where everyone gets a chance to send something to space.

- Supported by the Australian Space Agency and the SmartSat CRC.
- High school students undertake an online Space Applications micro credential teaching them about space science and Australia's role in space.
- Teams compete as they pitch their own experiment idea to a panel of industry professionals.
- Everyone is a winner! The leading team will develop their own experiment concept with staff at the Swinburne Space Technology and Industry Institute. Other teams play a support role by sending additional samples.
- All teams have access to University student mentors throughout the program.
- Diversity and inclusion are a focus across the program.





# WHAT IS CRISPR?



# on Challenge

to scale-up  
everyone gets a

the Smart

**Student teams develop their own solutions to real space challenges!**

- Secondary students undertake a special Space A credential teaching them about space science and life in space.
- Teams compete as they present their most innovative idea to industry professionals.
- Everyone is a winner! The winning team will develop their experiment concept with staff at the Swinburne Space Technology and Industry Institute. Other teams play a support role by providing additional samples.
- All teams have access to University student mentors through our mentor program.
- Diversity and inclusion are a focus across the program.



## BEAN SPROUTS!!

Amazing antioxidants!

Grow in the dark!

TINL





# Youth Space Innovation Challenge

## Progress

- In 2021, we had five interstate teams
- In 2022, we had 10 teams from across Australia
- We introduced an All-Star concept to allow students from different schools to create teams.
- How can we better integrate with Schools?
- International collaborations



# Thank you

Contact: [spacechallenge@swin.edu.au](mailto:spacechallenge@swin.edu.au)

