



DELIVERING ASTRONOMICAL IMPACT FOR SCIENCE, INDUSTRY AND THE COMMUNITY

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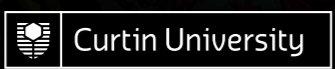
B275 EZONE CENTRAL	
LEVEL 3	EASTWOOD HIGHER DEGREE BY RESEARCH HUB EASTWOOD BAY GARDEN TERRACE
LEVEL 2	201 FLOATING MEETING ROOM 204 WORKSPACE EAST 206 MOPPIN STUDENT MEETING ROOM 206 213 GIURELLI LEARNING STUDIOS 218 WORKSPACE WEST 218A HOBBS STUDENT MEETING ROOM
LEVEL 1	101 FLOATING MEETING ROOM 105 - 108 ENGINEERING FOUNDATION LEARNING STUDIOS
GROUND	005 MATERIALS TESTING LABORATORY 007 HYDRAULICS LABORATORY

STARGIRLS STEM CAMP

CASE STUDY



International Centre for Radio Astronomy Research





## STARGIRLS STEM CAMP

When students attending the Stargirls STEM Camp walked into ICRAR one in five said they were very interested in a career in astronomy.

Three days later, that number had doubled.

The students very interested in a career in engineering quadrupled, while the number very interested in data science also rose.

Stargirls STEM Camp was launched to give girls and non-binary students an opportunity to get involved in real-world astronomy projects.

Former ICRAR SPIRIT coordinator and camp organiser Melissa Van Dam says the students typically come away from the camp with a clearer idea about what they might like to study at university.

“We see a big jump in students’ interest in careers in astronomy and engineering,” she says.

“There’s also a shift from generic ideas about ‘astronomy’ before the camp to more specific ideas like ‘bioastronomy’, ‘cosmology’ and ‘cosmic dawn’ after the camp.”

Van Dam, a teacher, says she decided to start the camp after reading the Women in STEM

Decadal Plan (Australian Academy of Sciences Plan), which highlighted that fewer girls were enrolling in science subjects in late high school.

She says she wanted to give girls a chance to experience real-world physics, engineering and maths in an environment without the boys.

**“The thing I enjoyed the most was being able to hear and talk to people who worked in the space industry, as I was able to learn lots and gain an insight into the working environment that I would not usually be aware of.”**

**STARGIRLS STEM CAMP PARTICIPANT**

“It’s always been one of my goals to bring students to STEM, particularly those who are underrepresented—whether that’s Indigenous Australians, girls or others,” Van Dam says.

“I know a lot of education studies show that having the opportunity to practice science and engineering means young girls can see themselves in STEM in the future.”

The camp is held in the January school holidays, and is open to students in Years 9 to 12.



The camp has had 40 participants over two years, with most in Year 10 or 11.

Over three days, the students were given the opportunity to:

- Use research-grade telescopes
- Do astronomical calculations
- Talk with leading astronomers and engineers
- Learn about data science at the Pawsey Supercomputing Centre
- Go stargazing at night
- A host of other astronomy activities

Van Dam says the camp comes at a formative time when girls are looking to their future, making choices around subjects for ATAR and university.

She says ICRAR endeavoured to include students from different backgrounds, including public, private and distance education schools.

Importantly, the event was free for students, ensuring cost wouldn’t be a barrier for those from low socio-economic areas.

Van Dam says the relationships built during the camp are continuing to support the students.

“Several participants from the camps, have kept in touch with ICRAR through emails and signing up for work experience,” she says.

**Cover** Participants learn what it takes to be an engineer in a workshop run by UWA equity program Girls in Engineering.

**Far Left** Participants get familiar with ICRAR’s telescopes.

**Top** ICRAR software engineer Nadia Steyn talks to participants in a speed networking session.

**Bottom Left** Participants and their families learn how telescopes work.

**Bottom Right** Participants learn how to code in a workshop run by the Data Institute.

**“The STEM camp was thoroughly enjoyable and I loved the experience. I personally wouldn’t change a thing about it.”**

**STARGIRLS STEM CAMP PARTICIPANT\***

**POSITIVE RESULTS**

**45%\***

participants reported being ‘very interested’ in a career in astronomy following the camp, up from 22% before

**27%\***

participants reported being ‘very interested’ in a career in engineering following the camp, up from 6% before

\*Based on 2023 participants



Three ICRAR astronomers—Dr Adelle Goodwin, Dr Sabine Bellstedt and Dr Natasha Hurley-Walker—have been named Superstars of STEM by Science and Technology Australia.

Superstars of STEM is an Australian initiative that aims to smash gender assumptions about who can work in science, technology, engineering and maths. The program equips brilliant diverse STEM experts with advanced communication skills and opportunities.

ICRAR’s Superstars spoke to students at Stargirls STEM Camp, sharing their journeys in science and astronomy.

ICRAR has also been named a Women in STEM Decadal Plan Champion, and for three consecutive years been the recipient of the Gold Pleiades Award for its commitment to advancing diversity and inclusion in astronomical sciences and technology.