



← [2020 UNE Alumni Award Winners](https://www.une.edu.au/alumni/alumni-of-distinction-and-award-winners/alumni-award-recipe)(<https://www.une.edu.au/alumni/alumni-of-distinction-and-award-winners/alumni-award-recipe>)

Associate Professor Alice Gorman

A stellar career

NASA estimates there are more than 500,000 bits of human debris larger than a marble spinning around in Earth's orbit. From the upper stages of rockets to decaying spacecraft bodies, spy satellites, needles of metal and even the carcasses of cockroaches. Perhaps most famous among this space-age collection is a lost wrench, an astronaut's glove and human footprints on the Moon.

"People use the term space junk, but it's much more complex than that," says Associate Professor Alice Gorman, from the College of the Humanities, Arts and Social Sciences at Flinders University.

An archaeologist who completed her PhD at UNE in 2001, Dr Space Junk (as she is known) sees the debris somewhat differently. "Space is a cultural landscape, just like Earth, and these items are part of our material culture and space heritage," she says. "They are imbued with all sorts of scientific, political and social meanings tell the stories of our human relationship with space, and may inform the next steps we take."

Twenty years ago Alice was instrumental in pioneering the field of space archaeology internationally. Using ear methods and theories, she has helped demonstrate the importance of recording and studying the artefacts an sites that evidence human exploration. Along the way, through the United Nations Office of Outer Space Affairs, the Australian Space Agency, and the Space Industry Association of Australia, she's become a strong advocate f sensitive space policy and the ethical and sustainable use of space resources. With space tourism and mining emerging as distinct possibilities in future, this voice is assuming greater importance.

"Things are changing really fast; people are proposing to mine the Moon and settle on Mars," Alice says. "Looki at the ways that humans have conceptualised our place in space, and we've used technology to interact with space in the past, is important to making good decisions in the present."



Most recently, Alice and her fellow space archaeologist Justin Walsh, from Chapman University in California, have begun collaborating with NASA to explore the archaeology of the International Space Station. They are using machine learning to analyse millions of images in the NASA archives as well as its inventory management system (which logs everything that has gone to the station and returned) to show how crew members have interacted with objects and technology over time. "We hope the results will improve the efficiency of long duration space missions to the Moon, Mars and beyond in future," Alice says. "If a crew is going to set up an isolated habitat on Mars, for instance, then understanding what makes things work more efficiently or enhances people's wellbeing could be the difference between life and death."

A sought-after space commentator and communicator, Alice is a popular contributor to *The Conversation* and Twitter, and her research blog (Space Age Archaeology) is archived by the National Library as a significant scientific publication. Her award-winning book *Dr Space Junk vs The Universe: Archaeology and the Future* has inspired spirited discussion ever since its publication in 2019.

However, while her head is often in the heavens, Alice's feet are firmly on the ground. She teaches and continues to work around Australia as a heritage consultant, often in collaboration with Indigenous people, and is one of few space researchers to highlight the importance of indigenous peoples having more input into the space industry internationally.

Advancing the needs and rights of women in space is another subject close to Alice's heart. As a mentor and ambassador for the Space4Women Mentor Network developed by the United Nations, she is determined to contribute to UN Sustainable Development Goals. "Women have been traditionally excluded from space, and I'm aiming to help break down those big structural barriers," she says. "Women need to gain more of a foothold in STEM fields and men need to be prepared to confront some of their deeply held prejudices. My path into space has not been a traditional one; I've shown that you don't have to be a mathematician or an engineer to work in space."

Alice's original ambition was, in fact, to become an astrophysicist, but she says she "wasn't actively discouraged but wasn't actively encouraged either". Finding a unique way to combine a fascination for past human behavior with her passion for space has opened up entire galaxies of opportunities.

"The answers to why we are here, the big questions of the meaning of life are caught up with understanding the universe; that's the big scale," Alice says. "Archaeology explores the smaller scale, looking at past human behaviour, the use of different technologies in different environments, and how that has changed over time. These are two different ends of the same question and the more I work in this area, the fewer differences I see between Earth and space."

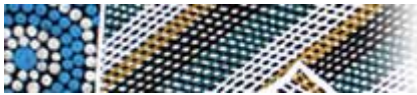
People often ask Alice why space travel and exploration is even legitimate when we've been unable to adequately look after planet Earth. "There's a chance to get it right with space," she says. "I can't say we are on a good trajectory at the moment, but it's really important to get people thinking and talking about this, and one way to do that is to tell the stories of the objects in orbit."

Human interactions with space are endless and vital. "The twin Voyager 1 and 2 spacecraft are exploring the furthest reaches of deep space right now, serving as sensors for us; cosmic rays, meteorites and inter-planetary dust are falling to Earth regularly; and our planet is driven by the light of the Sun and the Moon," Alice says. "We are not isolated; we are and always have been very connected into the whole solar system and galaxy beyond. And you can have those perspectives without leaving earth."

As for travelling into space herself, Alice is more ambivalent. "When I was a little kid, it was something I wanted more than anything else in the world," she says. "Now, I am a bit agnostic about whether we should be moving fast into space. I support the space industry but I also don't want to see us get it badly, badly wrong, to the point we can't go back."

Congratulations Associate Professor Alice Gorman, one of our 2020 UNE Distinguished Alumni Award winners.

[Back to top](#)



The University of New England respects and acknowledges that its people, programs and facilities are built on the land of the contemporary, of the world's oldest living culture. In doing so, UNE values and respects Indigenous knowledge