

# ***WOMEN IN STEM DECADAL PLAN***

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## ***ASTRO 3D Response***

FEBRUARY 2020

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**ASTRO 3D**

IN  
PARTNERSHIP  
WITH:



# **ASTRO 3D : INTRODUCTION**

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*ASTRO 3D is an Australian Research Council Centre-of-Excellence, formed in June 2017, it will operate until June 2024. It has over 200 members, mostly located at 6 nodes:*

*Australian National University (ANU, Primary node of ASTRO 3D)*

*Curtin University (Curtin)*

*Swinburne University of Technology (Swinburne)*

*University of Melbourne (UMelb)*

*University of Sydney (USyd)*

*University of Western Australia (UWA)*

The Centre seeks to answer The Origin of Matter, The Periodic Table & The Origin of the Ionised Universe using world-class astronomical instruments and state-of-the-art numerical simulations.

Our vision statement outlines the aspirational goal of unlocking the mysteries of the Universe using innovative 3D technology. Our mission focuses on how the vision will be achieved and emphasises the need to share the excitement and wonder of astronomy to inspire the broader community.

**OUR VISION:**

**UNLOCKING  
THE UNIVERSE.**

**OUR MISSION:**

**INSPIRING  
THE FUTURE.**

# 1 / LEADERSHIP & COHESION



## OUR CORE VALUES :

Honesty  
Trust  
Transparency  
Respect  
Diversity  
Fairness  
Inclusion

*We aim to achieve a culture that is:  
Collegial, Supportive, Nurturing, Professional, Engaging,  
Empowering, and Inclusive.*

**ASTRO 3D'S** leadership is committed to establishing gender equity at all levels of the organisation through comprehensive policies. At its inception, the Centre's leadership identified the need for a diversity committee, starting with the formation of a working group to address the unnatural gender imbalance at its member nodes.

This working group was quickly followed by the *Equity, Diversity and Inclusion committee (EDI)*. *EDI* is developing policies, such as the *Diversity Action Plan*, to improve the representation of women and other under represented groups in the Centre. This committee itself is composed of 12/9 female/male from all seniority levels.

Addressing the artificial deficit of women and the lack of diversity in the Centre is one of the main goals of the *EDI* committee, senior management and node leaders. The *EDI* committee's main document, the *Diversity Action Plan*, has identified 16 objectives with clearly outlined actions to undertake. This document states our values and how we aim to build an inclusive culture.



**Lisa Kewley,**  
*Director*

— “ —

Studies show that increased diversity up to the highest levels of organisations, and effective diversity management, leads to organisations outperforming their competition in innovation, productivity and profit because more ideas are produced. These might be ideas for new experiments, products, or new ways to become more efficient or profitable.



**Ingrid McCarthy,**  
*COO*

— “ —

My vision for ASTRO 3D is to have a culture where we strive for excellence, not just in research, but in how our Centre operates, how we behave, how we collaborate and how we learn. An inclusive centre, that is diverse and allows everyone to access our training, information and events is one that has the potential to be excellent.



**Kim-Vy Tran,**  
*Chair of EDI*

— “ —

I want every one of us to reach their full potential. To make this happen, it is essential that we promote a culture where everyone truly feels like they belong and where they can thrive in their chosen profession.

## 2 / EVALUATION

*At its formation, the Centre laid out a range of Key Performance Indicators related to the representation of women across the organisation, the main one being that the Centre achieves 50% women representation at every level of the organisation by the end of the Centre's term.*



Annual ASTRO 3D Science Retreat 2019

We continuously track the Centre's gender balance and diversity in order to implement evidence-based policies that improve our gender balance to meet this Key Performance Indicator. The *EDI* committee meets every month to discuss how to improve the diversity and gender balance, findings and policies from other organisations and how to capture our progress. The *Executive Management Committee* and the *Science Management Committee* also frequently discuss and implement mechanisms (e.g. women-only hires) to address the gender imbalance.

We continuously evaluate our progress through several different avenues:



Barossa Valley Conference 2018

- Climate surveys that capture our workplace culture, how members feel about ASTRO 3D, and what improvements can be made. We run these every two years and use a third party, 'Leaderskill' to provide anonymised feedback used to inform policy. Recommendations from these surveys are implemented across the Centre.
- Applying to programs like the *Women in STEM Decadal Plan Champion* and the [\*ASA Pleiades Award\*](#), which provides an outside evaluation of an organisation's commitment and progress based on a clearly defined set of criteria. *The Pleiades Award*, given out by the *Astronomical Society of Australia* "recognises organisations in Australian astronomy that take active steps to be welcoming and supportive of all academic staff and students, regardless of gender, sexual identity, ethnic and cultural background, disability, age, family / carer responsibilities, political affiliation and religious belief."
- From inception, the Centre has had an active *International Advisory Board*. This board provides a third party evaluation of the diversity and gender balance of our members, ensuring the global relevance of the centre.
- We have Annual Retreats where all members are invited to participate in discussions of our progress and present ideas that can help improve our diversity.

# 3 / WORKPLACE CULTURE

*ASTRO 3D seeks to foster a nurturing and inclusive environment for all its members as clearly stated in our **Equity, Diversity, and Inclusion Action Plan.***



Annual Retreat 2019

We value *“Honesty, Trust, Transparency, Respect, Diversity, Fairness, Inclusion”* that will achieve a culture that is *“Collegial, Supportive, Nurturing, Professional, Engaging, Empowering, and Inclusive”*.

Building a nurturing culture free of gender bias for the Centre is a unique challenge as its nodes are at multiple institutes in multiple time-zones. We encourage collaboration between our members and across nodes by holding monthly telecons, multiple inter-node workshops and by encouraging our members to visit other nodes. We hence promote a healthy and inclusive environment through a multifaceted approach. Some strategies we employ are listed as follows:

- Individuals should be treated fairly and with dignity and work in an environment free of harassment and discrimination. A major obstacle to this is unconscious bias. The Centre organises workshops on unconscious bias.
- Unconscious bias training is not enough as over time people naturally revert back to their biases. The Centre is breaking down stereotypes and encouraging people to view others as unique individuals through our monthly newsletters *“We are the People”* section that presents the personal interests of a member to the Centre.



Annual ASTRO 3D Science Retreat 2019



- Conferences and workshops are critical to professional development. The *EDI* committee has written the *ASTRO 3D Guide for Inclusive Meetings* that details actions that promote a healthy environment. This document clearly states that scientific organising committees and invited speakers should be representative of all gender identities to ensure that women are not underrepresented.
- The Centre provides childcare at all ASTRO 3D organised conferences and workshops and also provides funds for primary caregivers to cover the associated costs for external events. Our guidelines state meetings and telecons should occur during family friendly hours if possible.
- We have organised a “*Women’s Leadership*” workshop to provide training and mentoring that attempts to address the artificial deficit of women in senior roles.
- Bullying and harassment are not tolerated. Members can approach their Node Leader, the Director or the COO to voice any concerns they may have. We also provide an anonymous feedback form on the website if members do not feel comfortable talking in person. Additionally, we have three independent Ombudspersons to help manage cases of grievances that might occur at Nodes or Partner Institutes. All issues are reported to the Director and relevant university HR departments.





**Dian Triani**  
PHD Student  
EDI Representative

— “ —

I find that ASTRO3D really cares about making each member feel welcomed and supported. Even better, the centre succeeded to raise the awareness regarding EDI issues among its member, so now everyone is trying their best to make the workspace more inclusive.



**Adam Watts**  
PHD Student  
EDI Representative

— “ —

ASTRO 3D continually strives, and has so far succeeded, to nurture a workplace environment built upon diversity and equality; ensuring all members are comfortable and supported. This is evident in the training provided by the centre, such as unconscious bias training, the extent of conscious effort put into student and ECR development, and the research success of the centre so far.



**Pascal Elahi**  
Postdoctoral Fellow  
Deputy Chair of EDI

— “ —

What stands out to me is the equal importance given to scientific excellence and developing a nurturing culture where people are treated fairly and diversity is celebrated. I think it is fantastic that the Centre recognise that you simply cannot have the former without the latter.

## 4/ VISIBILITY

*ASTRO 3D offers multiple avenues for promoting our research, highlighting the contribution of women in STEM and emphasising our diverse team.*



Annual ASTRO 3D Science Retreat 2019

- The Centre produces press releases, which are available on multiple sites including the [ASTRO 3D website](#). To date, there is an almost equal representation of women and men featured: 15 men and 14 women were quoted and/or mentioned.
- The Centre's **Guide for Inclusive Meetings** specifies the percentage of positions in meetings, such as chairs, that should be filled by women (and early career researchers). This is to raise the profile of women in the early stage of their career.
- Our **Annual Report** highlights people carefully selected to represent members from all seniority levels equally split between gender from all projects and surveys across all nodes.
- The Centre ran the “Uluru Astronomer in Residence” program in 2018 and 2019. This outreach opportunity has had ASTRO 3D members of all levels of seniority present, raising the visibility of these researchers in the public eye. Women have been 12 of the past 22 speakers, with the format changing in 2019 to make it more convenient for caregivers to attend.

## 5/ EDUCATION & OUTREACH

*Our core mission is to “Inspire the Future”.*



YMCA Canberra Science Squad

The Centre employs 6 Education and Outreach staff to facilitate presenting our research to the public and develop education programs for schools. This staff is 4/2 female/male. These education programs target groups that are underrepresented in STEM, such as female and indigenous students, and lower socio-economic areas. We ensure that they are gender inclusive and use gender neutral language. All media (photos, videos, audio) for resources are gender balanced and any public events (panels, lectures etc) have equal gender representation.

We run two specific programs: **ASTRO in the Classroom & Telescopes in Schools** for primary / secondary schools. These programs actively target girls-only and schools in low socio-economic and remote areas.



### **ASTRO in the Classroom:**

The program introduces students to research scientists and STEM entrepreneurs through workshops, showcasing opportunities that a STEM career could bring them. The program follows on from a program started by CAASTRO, ASTRO 3D's predecessor and is funded by the Federal Government's *Women in STEM* and *Entrepreneurship* grants.

### **Telescopes in Schools:**

Aimed at encouraging students from under-represented demographics into astronomy, this program, based on "The ICRAR SPIRIT in Schools" program that has been designed for female students and students from lower socioeconomic backgrounds in Regional and Remote areas.

Classrooms are provided remote access to telescopes or an 8 inch Dobsonian telescope and teachers given support to aid their students in designing, implementing and completing an astronomy research project. *As part of our Indigenous Engagement activities, we will target indigenous schools and also explore how different cultures view the night sky.* Currently running as a program with 60 students and 10 groups in 2020 in WA, *it has provided Dobsonian telescopes to 25 regional and remote schools across Australia in 2018 and 2019.*

## Uluru Astronomer in Residence:

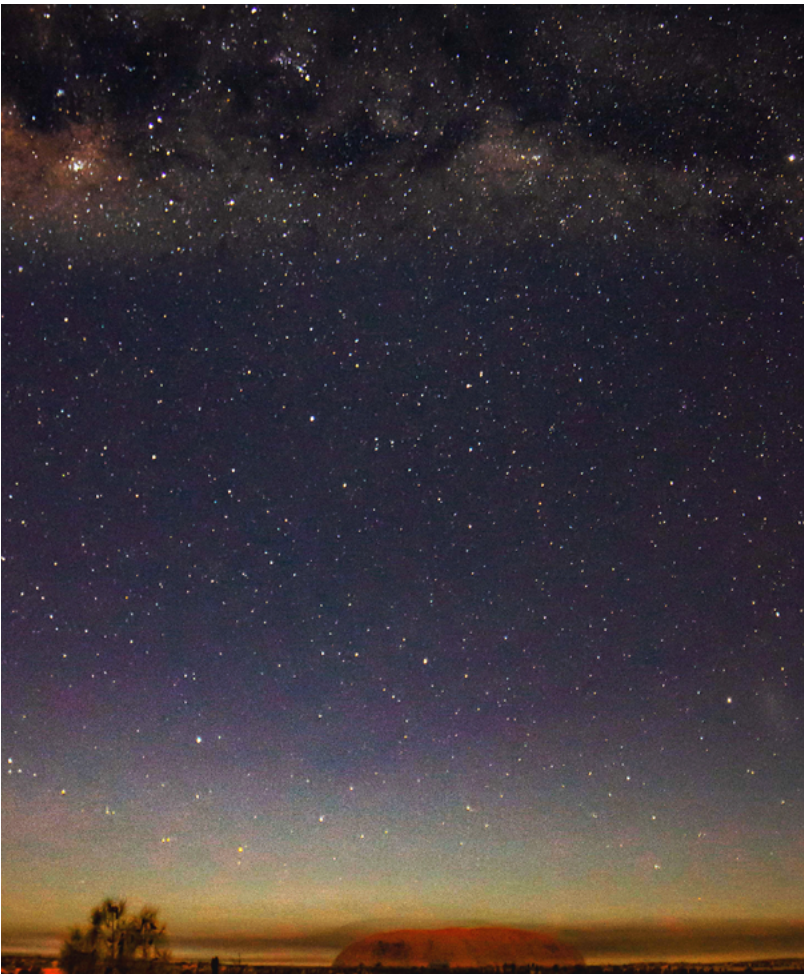


Photo by Ayan Acharyya, ANU PhD student

ASTRO 3D has continued running the “*Uluru Astronomer in Residence*” program, which was started by its predecessor, **CAASTRO ARC CoE**.

Initially “*Uluru Astronomer in Residence*” program required a two week commitment, which skewed the program from female applicants: 2 female, 11 male. In 2019, we gave the option of family- friendly 1 week stays, resulting in a more natural split : 12 female, 10 male.

## Node Events:

The Centres’ nodes run specific events at their locations, either organised by ASTRO 3D or organised separately but to which ASTRO 3D significantly contributes.

- Members contribute to: *Perth Science Festival, Perth Astrofest, Melbourne Astrolight Festival, Siding Springs Open Day, Sydney Astrofest, Girls in Physics* (Melbourne).

An example of one of these events is the “*YMCA Canberra Space Squad*”. At this event an ASTRO 3D researcher gives a presentation to high school students and runs hands-on activities to highlight our science. We ensure that both presenters and audience are equally split amongst the genders to the young audience with good female role models.

## 6/ **INDUSTRY ACTION**

*The Centre has directly changed the gender imbalance at its member nodes by sponsoring Women Only positions.*



ASTRO 3D Retreat : Goldfields 2019

The Centre's impact on the Universities that make up its member nodes has been significant. The Centre has directly changed the gender imbalance at its member nodes by sponsoring Women Only positions. These positions are not limited to entry level positions but span a range of seniority levels. Two such permanent positions have been taken up by the University of Western Australia, increasing the number of permanent women research staff from 1 to 3. Overall, as of 2019 the Centre has hired 3 women permanent positions.

The Centre is also developing an extensive Hiring Practices guideline that aims to address the unconscious bias and existing policies that present an unacceptable and artificial obstacle to women in STEM. These guidelines will be presented to the universities of the Centre's nodes, which may be integrated into their general hiring practices.

Partners must adhere to the **ASTRO 3D's code of conduct**, which applies pressure to the larger academic community to champion unified goals.

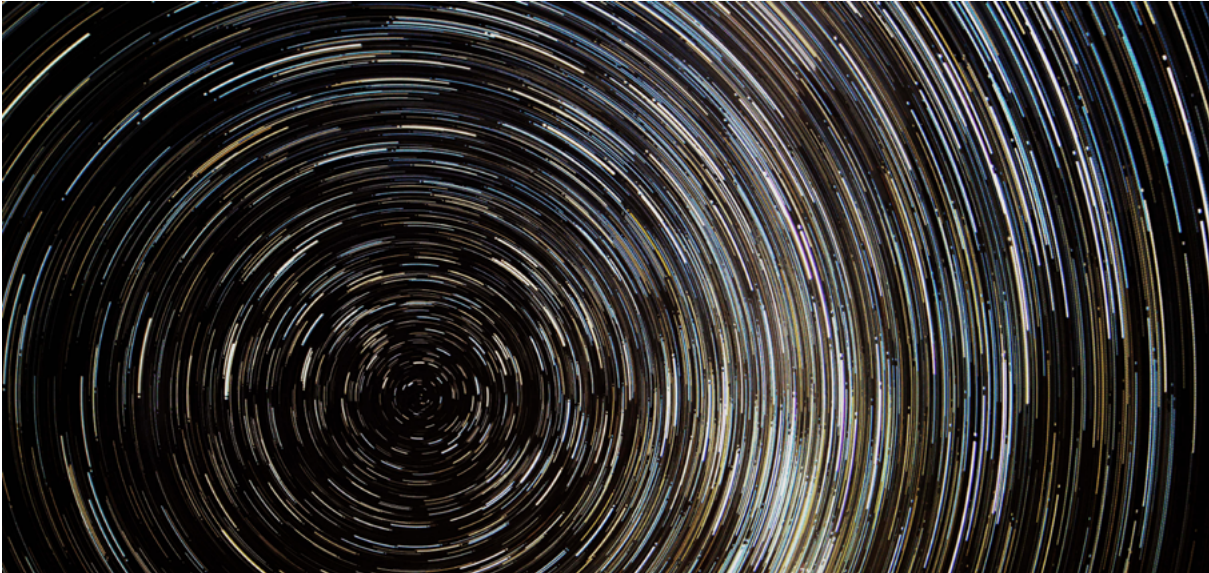


Photo by Ayan Acharyya, ANU PhD student

The Centre's impact is not limited to its member nodes: Currently, the Centre is partnered with several Australian institutes including: The *Commonwealth Science and Industrial Research Organisation (CSIRO)*; The *National Computational Infrastructure (NCI)*; and the *Australian Astronomical Observatory (AAO)*.

The Centre is also partnered with several international universities and research institutes:

University of Toronto  
University of Oxford  
University of Washington  
Heidelberg Institute for Theoretical Studies  
Chinese Academy of Sciences  
*ASTRON Netherlands Institute for Radio Astronomy*

To improve representation of women in STEM, all policies and programs we develop can be integrated into our partner's policies - from hiring guidelines to our **Equality, Diversity and Inclusion Action Plan**. Our partners *must* adhere to ASTRO 3D's *code of conduct*, which applies pressure on the larger academic community to have awareness of important issues and champion unified goals.

ASTRO 3D respectfully acknowledges:  
*The Ngunnawal People of the Ngunnawal Nation (ANU)*  
*The Wadjuk People of the Nyungar Nation (UWA and Curtin)*  
*The Wurundjeri People of the Kulin Nation (Swinburne and UMelb)*  
*The Gadigal People of the Eora Nation (USyd)*  
their Elders past, present, and emerging, who are the traditional  
custodians of the land on which the Centre's Nodes are located.

The logo for ASTRO 3D, featuring the text "ASTRO 3D" in a bold, purple, sans-serif font. The "3D" is stylized with a 3D effect, appearing to float above the "ASTRO" part. The logo is set against a light grey rectangular background.

ARC CENTRE OF EXCELLENCE  
FOR ALL SKY ASTROPHYSICS IN 3D

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<https://astro3d.org.au/>

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