THE Santos SCIENCE EXPERIENCE



21, 22 and 23 September, 2021. Charles Darwin University, Casuarina Campus



You make CDU

Students from Darwin Middle School, The Essington School of Darwin, Good Shepherd Lutheran College, Haileybury Rendall College, Mackillop Catholic College, Marrara Christian College, Nightcliff Middle School, Palmerston Christian School, Palmerston College, Sanderson Middle School, Sattler Christian School, St Johns Catholic College, O'Loughlin Catholic College, Xavier College (Tiwi Islands), Shepherdson College (Elcho Island), St Joseph's Catholic College (Katherine) and St Philip's College (Alice Springs)



Our invaluable student sponsors

Chief Minister – The Honourable Michael Gunner MLA



NTG Dept. of Environment and Natural Resources



Member for Drysdale – The Honourable Eva Lawler MLA



Rotary Club of Alice Springs



NTG Dept. of Education



Member for Casuarina – Hon. Lauren Moss MLA



Member for Wanguri -The Honourable Nicole Manison MLA



Rotary Club of Darwin Sunrise



Rotary Club of Litchfield/Palmerston



Science Schools Foundation



Surveying and Spatial Science Institute of the NT (SSSINT)



Santos Australia



Seagull Press



Program Overview

Charles Darwin University (CDU) is one of 34 universities in Australia who host the annual Santos Science Experience. Our event program is open to any year 9 student who may be interested in learning more about science, engineering and information technology, regardless of their academia. CDU is committed to supporting and encouraging participation from students of Indigenous or low socioeconomic status (SES) background, regardless of their current year level. Each year, we secure additional sponsorship to support the travel costs of transport, meals and accommodation for remote students.

CDU acknowledges that our success relies on sponsorship from our national sponsor, Santos Australia, the Science Schools Foundation, NT Government, local, interstate and intrastate business and community organizations. This support ensures all NT students have the opportunity to participate in this event, not just those who have the financial means.

Program Objectives

It is our goal to ensure that students know what to expect as they enter their senior schooling, and of the direct link between their education and future opportunities. We understand that this time in their life is vital, and a positive approach to education can make a world of difference. By providing a solid educational foundation, we are allowing students to make informed decisions regarding subject selection for their senior studies.

Our aim is to highlight the need for skilled workers in the NT and demonstrate the opportunities available to them locally. We do this by;

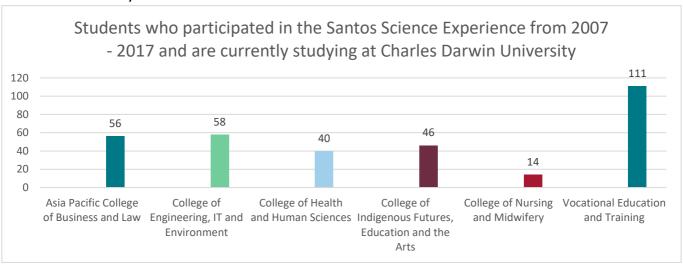
- Offering a broad range of both interesting and practical learning experiences in both our Vocational Education and Training (VET) and Higher Education sectors.
- Introducing the supportive network of local business' in the Territory, and the wide range of employment opportunities available.
- Providing an overview of the research programs and activities CDU are currently engaged in on a local and national level.
- Including career investigations, offering an insight into the options they will have in the next 3 years of secondary schooling, as well as highlighting the differences in obtaining a Northern Territory Certificate of Education and Training (NTCET) and NTCET with Australian Tertiary Admissions Rank (ATAR).

Event Information

To maintain a high standard throughout the event, numbers are capped at 100 students. This number does not include supporting staff from schools. All attendants receive meals and refreshments, with students also receiving a Santos Science Experience uniform shirt and bag. All students and teachers also receive a certificate of participation. Students are encouraged to write a brief thank you letter to their sponsor, as well as an event evaluation form to ensure that we keep offering an enjoyable experience for the students.

In 2021, we had 17 schools in attendance, including Xavier College from the Tiwi Islands, Shepherdson College from Galiwinku, St Joseph's Catholic College Katherine, and St Philip's College Alice Springs.

Where are they now?



Student Evaluation – Summary

In total, we received 92 student surveys. A whopping 98% of students have confirmed having a better understanding of the courses available to them at CDU. 100% of students stated that the activities included within the event were both informative and fun, with Information Technology and their augmented and virtual reality activity coming through as a clear favourite. This was followed closely by the NT Medical Program, and Health Science in our Health Immersive Virtual Education (HIVE). 50% of students have requested further information be sent to them, with 96% of students saying that they would now consider studying a Vocation Education and Training (VET) or Higher Education qualification.

Student Career/Study Requests

Forensic Science	Medicine	Biology	Aquaculture
Science	Psychology	Engineering	IT
Automotive	Business	Health Science	Construction
Carpentry	Heavy Vehicles	Nursing	Design
Law	Music	Education	Visual Arts
Conservation and Land	Exercise and Sport	Medical Laboratory	Environmental
Management	Science	Science	Science

The Experience!

NT Medical Program

Dr Buddhika Weerasundera, David Newman









The NT Medical Program gives students an opportunity to study medicine locally, preparing them for a rewarding career. In affiliation with Flinders University, students complete both the Bachelor of Clinical Sciences and the Doctor of Medicine. Students had an opportunity to view the anatomage table, practice their CPR skills and test their knowledge of human anatomy and rebuild a skeleton. www.cdu.edu.au/study/course/bachelor-clinical-sciences

Engineering - Bungee chicken

Francois Botha









Students are provided with a mathematical equation – where the correct answer provides the right amount of bungee cord to drop from the third floor of Purple 14, without hitting its head on the ground below!

https://www.cdu.edu.au/engineering-it-environment

Exercise and Sport Science

Liz Grylls, Clare Quinlan









Exercise and Sport Scientists are experts in understanding how human bodies respond to exercise, and how to make a difference to the quality of life for all people. Exercise and Sport Scientists use exercise as an intervention to improve health and fitness, enhance physical performance and prevent and rehabilitate injury in both healthy and physically challenged populations. Students tested their concentration and teamwork with individual and group activities.

https://www.cdu.edu.au/health-human-sciences

Health Immersive Virtual Education (HIVE)

Sufyan Akram, Clare Quinlan, Prem Rangwani









The Health Immersive Virtual Education (HIVE) uses virtual and augmented reality to allow students to explore complex subjects in a virtual environment, engaging all their senses. Students were able to virtually explore the heart and lungs, observing the differences in healthy and sick organs. https://www.cdu.edu.au/health-human-sciences

Information Technology – Augmented and Virtual Reality

Cherry Narumon Sriratanaviriyakul, Jens Cheung, Cat Kutay, Asif Karim









Students had the opportunity to further experience augmented and virtual reality with our Information technology team. With AR and VR becoming more common, our teaching staff are incorporating elements into their lessons and assignment plans for students wanting to study technological advances. https://www.cdu.edu.au/engineering-it-environment

Aquaculture

Morris Pizzuto









Students were shown through the shade gardens and taught about aquaponics and how it can be implemented in their schools or at home to grow fresh herbs and vegetables. In addition to seeing the coral tanks, students had the opportunity to hand feed our large barramundi. https://www.cdu.edu.au/study/vet-aquaculture-maritime

Medical Laboratory Science

Gabriela Minigo, Deborah Holt







Have you ever wondered about what's in your blood? What is it actually made of? How can analysing blood give us information on someone's health? Students discussed the basic components of blood, and the roles they play in health and disease. As a group, students looked at how analysing changes in the blood can provide information about how the body is functioning.

https://www.cdu.edu.au/health-human-sciences

3D Fire Model – Workshop

Kerry Crosbie, Patrice Weber, Rohan Fisher









Students participated in an augmented reality demonstration of how bushfires can spread, using a 3D printed map of Kakadu National Park. This technology is used as landscape management, to assist with controlled burns and predicting patterns.

https://www.cdu.edu.au/engineering-it-environment

ERGT – Oil and Gas Demonstration

Emma Donovan, Darren Edis, Sarah Brunton, Darren Carter and Desmond Herbert.







Students were introduced to Emergency Response Group Training (ERGT) Australia. Safety is paramount in any situation, but there are some specialist industries with complex working environments who require further training. ERGT work with industries including oil and gas, maritime, mining, aviation and the Australian Defence Force. The simulated practical training gives all involved a better understanding of workplace safety and the practices around incident response. https://ergt.edu.au/

Spaghetti Tower

Student Ambassador Hayley Shields and group leaders











Students were provided dry spaghetti pasta, string and masking tape and were tasked with creating the biggest tower they could that would support the weight of a jumbo marshmallow. The only instructions were to be creative and think outside the box.

The study pathways for the job you want

Irta Oakley







What do you need to do now, at school, to prepare for your dream career?

We explain the differences between Vocational Education and Training (VET) and Higher Education, define what an ATAR is and prepare students for their senior years of high school. Students were provided with a bit of an insight into the different job and career opportunities available to them, with information around the different levels of qualifications.

https://www.cdu.edu.au/schools-engagement

Trades Tour

Trisha Kohlweg









Students were taken on a tour of our VET precinct, highlighting the numerous trade options available at CDU. VET for Secondary Schools opens to students in year 9, so it provides an opportunity for students to see the facilities and register their interest in enrolling into a program.

Students were shown through automotive, spray painting and panel beating, construction, metals and engineering, 3D printing, fitting/turning, plumbing, refrigeration and electrotechnology. https://www.cdu.edu.au/study/vocational-education-training

Group leaders and Student Ambassadors









Closing Ceremony

Student winners in Exercise and Sport Science and Engineering Bungee Chicken















Media and Images

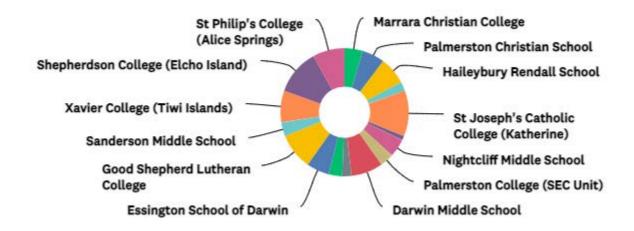
E-News: https://www.cdu.edu.au/news/inspiring-nt-school-students-towards-science-study-and-career-

pathways

Photo album: Facebook

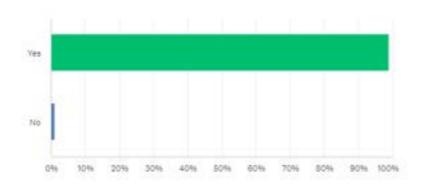
Schools Engagement website: https://www.cdu.edu.au/schools-engagement

Student Evaluation – Response



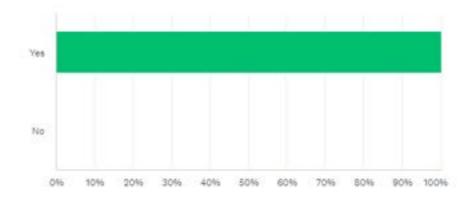
Did the event give you a better understanding of the courses available at CDU?

Answered: 92 Skipped: 0



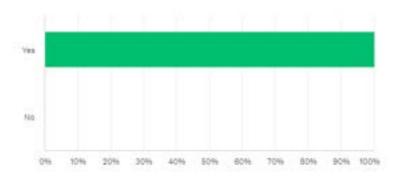
Were the activities involved in this event informative and fun?

Answered: 90 Skipped: 2



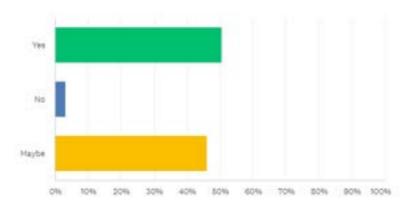
Do you think the event included sessions that are important for you to know?

Answered: 90 Skipped: 2



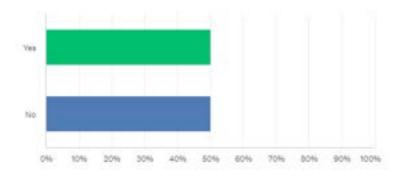
After school, would you be interested in studying a Vocational Education and Training or Higher Education qualification?

Answered: 91 Skipped: 1



Would you like more course information sent to you? If yes, please tell us what study areas below and we will send it to your school

Answered: 90 Skipped: 2



Tell us your favourite memory!

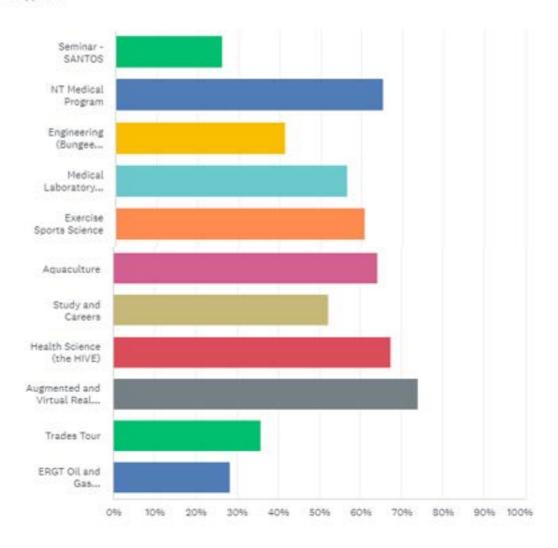
	PECDONICES
#	RESPONSES
1	The blood lab activity where we got to look at blood samples from patients. Also being able to receive advice about future research possibilities.
2	I enjoyed learning about aquacultures and how they reuse the water for growing plants. I found it really interesting.
3	I liked spending the 3 days here in CDU and making new friends.
4	Making friends and building the tower. Learning more things.
5	I liked looking at the interactive sculptures in the HIVE.
6	I really enjoyed learning about the different body model.s We viewed the ways they work and what they look from the inside.
7	I enjoyed everything but my favourite would have to be medical science because we got to look at blood cells.
8	I enjoyed aquaculture & how they use excrement & old food from fish, coral, shrimps to grow crops and plants
9	Studying blood cells at one of the medical units at the Univerisyt.
10	I really enjoyed the medical points involved in this time. I also enjoyed making new life long friends and i liked the lift from floor to floor & lunch.
11	My favourite memory during the science experience is diagnosing patients using thei blood test. I predicted too that patient had an injury / infection in their digestive tract and I was right.
12	The virtual reality tour and games and the aquaculture and horticulture tour.
13	Spending time with my friends and learning more about what I might do in future for a job or for a course at CDU
14	Learning about the aquculture and doing all the VR activities
15	Lunches, Basketball and Aquaculture
16	My favourite memory about CDU is Health science (The Hive)
17	being able to experience VR was an amazing and fun experience. it was also valuable to me to se all the medical science class rooms and learn more about the courses offered.
18	Making new friends and learning about engineering.
19	Chicken drop
20	My favourite memory was looking at the car
21	Aquaculture experience
22	My favourite activities is medical laboratory. Exercise and sport and health.
23	Meeting new people and learning so many things.
24	Meeting new people and making friends
25	Meeting new people and making new friends.
26	Meeting new people and making friends
27	First day here we got to look at and build the skeletons and disect a virtual body

28	Exercise and Sport Science							
29	My favourite memory of the university was doing health science at the Hive							
30	The spaghetti tower, having a creative idea and putting it into life and winning the competition which was a bonus.							
31	Being able to go to the science experience and learn science.							
32	Spaghetti Tower							
33	Lunch, medical program and the HIVE							
34	I enjoyed the VR class. I am realizing the importance of VR and training.							
35	The AR & VR was such a blast because I already now how to use those. I also enjoyed doing the spaghetti tower contest because it had marshmallows							
36	All.							
37	I really liked the aquaculture, because I found it interesting.							
38	Throwing the chicken off the balcony and the VR.							
39	My favourite memory was either getting to work on the 3D model of the deceased male (technology version) or being able to see the inside of some of our organs on the anatomy VR headset that was connected to the screen.							
40	Looking at the fish							
41	My favourite memory was when we all looked at and learnt about production of banana prawns red claw and Barramundi in the aquaculture session.							
42	Learning about VR and experiencing what it is like.							
43	I enjoyed the NT medical program, VR tech, and just so many more. I enjoyed looking at the fish in aquaculture abd drawing in VR. I cant choose!							
44	I really liked the aquaculture and the light mobile engineering trade tour							
45	Riding the bus and navigating around campus with my group							
46	playing volleyball at lunch and the 3D science							
47	The overall experience and getting a chance to be here (also time with friends)							
48	Though all of the sessions were amazing, I found the HIVE lesson very fun and educational.							
49	I enjoyed drawing and experiencing VR.							
50	Building the spaghetti tower was the funniest of all activities because people can have fun whilst learning.							
51	Everythin because its telling is our future and what we wanna do in our future.							
52	My favourite memory was doing the aquaculture activity							
53	The Spaghetti tower because my team won.							
54	I enjoyed the virtual reality HIVE and organ activity							
55	Learning how to use the defibrillator and perform CPR							
56	Everything							

57	I loved learning about what you can do with virtual reality but my favourite memory would possibly be the spaghetti tower.
58	I enjoyed looking at the aquaculture area and how bacteria can help in some cases. I am thinking about making an aquaponic garden so it helped me understand a little bit more.
59	The quaculture session was very inspiring because the teacher was passionate.
60	The Hive. It was fun as I got to see university level VR equipment as well as seeing my dad there !!!
61	Viewing the VR simulation of internal systems within the body, particularly the lungs, because you cold clearly see all.
62	VR Headset
63	VR was great as I have not done it before and Spaghetti tower
64	I liked the bungee chicken because it was fun and I got to use my brain.
65	Making new friends and going to different fun lessons.
66	Spaghetti tower, aquaculture and aquaponics
67	Spaghetti tower - we got to work with our team and eat marshmallows and chocolate.
68	I enjoyed meeting new people and connecting with others. I enjoyed the medical laboratory science because I met some nice people and had some great laughs.
69	Going to where they do agriculture and aquaculture.
70	When I got chocolate and sport science.
71	The medical program
72	When we flinders Uni to look at Medical. Playing with an interactive body (on screen) and meeting a wholebody CPR doll. I realised how passionate I am for what I want to be. Otherwise my favourite memory was the first moment I stepped into the auditorium (it was the first time for me)
73	Enjoying with my friends at CDU.
74	Trying to build the spaghetti tower and watching as it fell down. I still had fun though.
75	Looking at the fish
76	Fish and prawns involvement in agriculture and how they benefit as well as the breeding and how they feed on microscopic food.
77	Virtual Reality
78	Making the Spaghetti tower. I was a teacher for 20 years, working as Assistant Aboriginal Teacher and still teaching but more on doing yolnju science & teaching.
79	Exercise and Sport Science
80	Learning about blood testing and trade courses
81	Learning more about medicine pathways and the other areas of science. Had fun meeting and hanging out with friends.
82	Making friends with similar interests and learning what I can do with my future.
83	I liked walking through the aquaculture area because it was cool to see the growing prawns and the barra up close.
84	In Engineering, we worked out the correct measurement of the springy rope.
85	i really enjoyed using the VR to see the internal organs
86	Probably building the tower for the marshmellow. Small things were involved.
87	Using VR headsets was fun as it let us explore and view different worlds and artworks. I also liked the vibe of the Hive but Med & biology isnt my favourite thing.

Please tick the Activities you loved!

Answered: 92 Skipped: 0



Student Sponsor Thankyou letter

THANK	You	DEAR	Y FO	R THE	SPO	ONSOK	! 71	eis la	IAS .	SUCH	AN	AMAZING
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Dear Alice Springs Rotory Club

om Fire Holzmann Mould like to thank you sponsoring us on this trip. This opportunit has given me a chance to Will like, while also doing activities like studying homan aquacultures. I believe more should be open to the opportunity to attend this trip as it would be benefic program has helped careers in the science a fascinating career have a better has been wery eye copening learnt more bleath human sciences, engineering, earth - favourite activity where constructed Me. numan skeleton. YOU.

Dear Rotary Club litchfield darwin I am mikaryla from asic highschool. it has been an honer to attend this science experience and that you, a stranger, has paid \$190 for me to be here, I'm trate trucky grateful. I have learned and understand many Job pathways for me in the future after pradutation. this inculdes vir and opporture. it was generally a fun experience and in nathy I was chargen out of many others to go. unfortinately I do not plan to do anything scienced base when im older but instead I plan on doing Ant. (3) (might change) But due to this experience I have leaned stuff to help me after highschool to forfil my Job once agion can great growther for this experience - I've also learned and had ideas of tackup pathways-

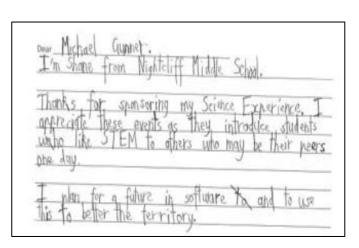
My name is the clatipung wuti, I'm from
Tiwilsland and igo school and to go
Catholic colleges minyola I want to go
University are after schooling. Thanks
to the workers for Show us which class
We have to go to the next class.

Dear Rotary Club of Alice Springs, I am so grateful for the amazing opportunity that you gave me by supporting me for this pogram. It's been absolutely incredible and it couldn't be happened without your unbelievable genourous assistance. So far I've been at CDU for 2 days and I've had some really eye-opening experiences that I will definitely be able to consider for my future. I really enjoy the sciences and I've discovered some amazing new branches of science that wouldn't know about if it ween't for you i'm only in grade 8 so the fact that I am able to have this possibility at such a young age is incredibly meaningful and I will never faget it. I've learn't new information from Aquacultures, medicine, physics, virtual reality. Are management and more. I'm really excited for what this program means for my future, as I want to be a forensic scientist, and new I have information I can The into my the though and how I could enter an area of science of CDU. Once again, thank you so much for supporting someone you don't know it has really changed my life

Dear Minister EVQ LOWER thank from for paying the price of plan ad attend this event My name is Laxshya Chanda I'm in year a about to go to year to. in this event I learn't # how to tell the differet cells in a blood test, physics equations, some sport brainy exercises, worked into governature bone structures, building towers from spageth sticks and marshmellow. This event bet helped me understand how to ochieve my goal of becoming a doctor I think I will stick to being a doctor because it's something I'm interested to become and some peoples life. Thank you so much again for so paying to attend this eventuand that thank you CDU for the amoring adventures

DEAT DEPT. OF Environment and Natural Resources I sincerely appreciate the fact that although you have nour met me, you willingly donated almost \$200.00 to allow me to be able to attend this event. By doing this you have given me an incredible opportunity to widen my knowledge about my future and the potential correct paths I could choose to go down. I never would have imagined that I would have teen chosen to be a fact of a program that is dedicated to helping lear 9s such as myself to finding what they are passionate about and turning it into a career to you, that has become possible and I will forever be grateful for that. My favourite activity throughout the whole experience would either have to be getting to use technological 3D model of a deceased male to practise using a scalled and identifying body parts properly or being able to watch as a member of CDU's staff used VR technology to see parts of the body from the inside.

Dear Scagull Thank you for sponsoring me and soming school Allowater Essingten. It means a lot to me that you paid \$190 to someone who doesn't know you. experience strengthen my choir to Messer graduate pursue my dreams to Din medicine. I'm not certain what specia Know that I will by paying \$190 means so much to me, knowing the world nowadays and how helptal me. This may just som every other generic attor others are sending but for allowing me activities, ranging from V.R rubber chicken off a 3 story building Chingy Jumping). So thank you Press, for the Spansoring.



Dear Stantos Australia! My name is Chice Kalikajaras, I go to O'Loughing Catholic college and am one of your sponser recicres to thank you for providing me a scholarship to this extradinary event. I means a lot to complete stranger understands students conquira ophicias when it comes to cutive corcers that this event can open up par them. Throughout this banton journey , I have learned about the bodies blood cells, how to use visualization in sport this event has helped me understand my education pathways this Well, letting younger grades expensence this them understand the occurs that VET courses Atars occert I just wanted to say a lig thank allowing me to take part in the Agua culture presentation, and the Whoat reality experience, and everything I saw! (and lear).

> Science in Schools Foundation Thonkyou for sponsoring me , on really grateful to be apart of the sontos science Experience My name is thanka koulakis and Lam student who goes to Haileybury Rendall school is has been a great apportunity do a variety of activities that really helped me understand an the different pathways people and myself can take to the first day learn't about blood acts, engineering (we had to find out how long the rape needed to be which was attatched to the duck and to drop it off the balcony), medicine, finders and my exercising in which we focused concentration on the second day health science 440 VR games building (the some First place) On the las day we looked as Aquarutture and Aquapanics trades four and oil and Gos industry Training really enjoyed everyoning we did and again would like to say thatteyou to science in Schools Foundations, I really appreciate it.

A huge thank you to all who made this event possible!

Sponsors

Santos Australia

Science Schools Foundation

Seagull Press

Chief Minister, The Honourable Michael Gunner

The Honourable Nicole Manison – Member for

Wanguri

The Honourable Lauren Moss – Member for

Casuarina

The Honourable Eva Lawler – Member for

Drysdale

Opening Ceremony

Stuart Barz – Santos Australia Engineer

Kim Brewster – Santos Australia

Liz Cruse – Santos Australia

Charles Darwin University

Francois Botha - Engineering

Liz Grylls – Exercise and Sport Science

Clare Quinlan – Exercise and Sport Science

Dr Sufyan Akram – The HIVE

Clare Quinlan - The HIVE

Prem Rangwani – The HIVE

Cat Kutay - IT

Asif Karim - IT

Jens Cheung - IT

Cherry Narumon Sriratanaviriyakul – IT

Flinders University – NT Medical Program

Dr Buddhika Weerasundera

David Newman

Emergency Response Group Training (ERGT)

Emma Donovan

Darren Edis

Sarah Brunton

Darren Carter

Desmond Herbert

Group Leaders and CDU Student Ambassadors

Zoe Chesworth – Green Group Leader

John Suelila – Pink Group Leader

Nandini Puranik – Orange Group Leader

Athena Ferreras – Yellow Group Leader

CDU Events Team

Jaime McCartney – Event Coordinator

Irta Oakley – MC and Event Staff

Tanya Weatherstone – Event Staff

Surveying and Spatial Science Institute of the NT (SSSINT)

Rotary Club of Litchfield/Palmerston

Rotary Club of Darwin Sunrise

Rotary Club of Alice Springs

NTG Department of Education

NTG Department of Environment and Natural Resources

Morris Pizzutto – Aquaculture

Gabriela Minigo – Medical Laboratory Science

Deborah Holt – Medical Laboratory Science

Kerry Crosbie – 3D Fire Model Workshop Patrice Weber – 3D Fire Model Workshop

Rohan Fisher – 3D Fire Model Workshop

Trish Kohlweg – Trades Tour

Irta Oakley – Study and Career Pathways

Tom Wang - Student Ambassador

Marufa Binte Muztaba - Student Ambassador

Mai Taworn - Event Staff