

## **EDUCATION**

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### **Doctor of Philosophy (Applied Geology)**

March 2017 – July 2022

- Space Science Technology Centre
- Earth and Planetary Science Dept. Curtin University
- Supervisors: ARC Laureate Fellow Prof. Phil Bland, Dr Lucy Forman and Dr Nick Timms
- Member of Desert Fireball Network
- Samples: Meteorites (Carbonaceous Chondrites); Interplanetary Dust Particles
- Techniques: NanoSIMS – trained; Two-step laser desorption/laser ionisation mass spectrometry ( $\mu\text{L}^2\text{MS}$ ); Scanning electron microscopy and Energy dispersive X-ray spectroscopy (SEM-EDS) – Trained; Transmission electron microscopy – preliminary training; Focused Ion Beam; EMPA; Fluorescent Microscopy – trained; Atom Probe Tomography – preliminary training
- Data Processing Software: ImageJ; Aztec Oxford instruments; AP Suite; GeoPIXIE; Canvas 11; CrysTbox; GIMP 2.0; mmass; Grams; Helicon Focus 7; RStudio; Python; Probe for EMPA

### **Bachelor of Science (Honours) (Applied Geology)**

Feb 2016 – Dec 2016

Curtin University

- Honours dissertation specialization: Planetary Science – Cosmochemistry (research based 20,000 word thesis on high temperature refractories within Carbonaceous Chondrites)
- Member of Desert Fireball Network
- Samples: Meteorites (Carbonaceous Chondrites)
- Techniques: Synchrotron XFM mapping; SEM-EDS – trained; Electron Backscatter Diffraction – trained
- Data Processing Software: GeoPIXIE; Adobe suite; Aztec Oxford instruments

### **Bachelor of Science (Applied Geology)**

Feb 2013 – Dec 2015

Curtin University

### **West Australian Certificate of Education**

Jan 2008 – Dec 2012

Seton Catholic College

## **CONFERENCES AND CO-AUTHORED PAPERS**

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**ORCID:** <https://orcid.org/0000-0001-7350-7687>

#### **50<sup>th</sup> Lunar and Planetary Science Conference – Principal Author** 2019

- Abstract: In Situ Coordinated Analysis of Carbonaceous Chondrite Organic Matter
- Lead all aspects of this research; drafted and revised the manuscript.

#### **82<sup>nd</sup> Annual Meeting of the Meteoritical Society – Principal Author** 2019

- Abstract: An In-Situ Organic Molecular Study of the Matrices of a Primitive CR2 Chondrite Meteorite Hills 00426.
- Lead all aspects of this research; drafted and revised the manuscript.

#### **Published Research Paper: Cambridge University Press – Co-Author** 2019

- Title: Recreating the OSIRIS-REx Slingshot Manoeuvre from a Network of Ground-Based Sensors. – Principal Author: Dr Trent Jansen-Sturgeon
- Assisted in data collection

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**82<sup>nd</sup> Annual Meeting of the Meteoritical Society – Co-Author** 2019

- Re-Os Model Ages for Refractory Metal Nuggets
- Assisted in Data Collection

**49<sup>th</sup> Lunar and Planetary Science Conference – Principal Author** 2018

- Abstract: Coordinated Analysis of Organic Matter in Primitive Meteorites
- Lead all aspects of this research; drafted and revised the manuscript.

## **EMPLOYMENT HISTORY**

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**LPI/ARES Postdoctoral Fellow** July 2022 – Current

University Space Research Association

- Postdoctoral Fellow at the Lunar and Planetary Institute, and Astromaterials Research and Exploration Science division of the Johnson Space Centre, NASA.
- Supervisors: Dr Ann Nguyen and Dr Cyrena Goodrich
- Samples: Meteorites (Carbonaceous Chondrites); Interplanetary Dust Particles
- Research Fields: Cosmochemistry; astrogeology; astrobiology

**Lab Assistant** Jan 2019 – May 2019

Curtin University – Bentley Campus

- Displayed methodical, logical and organizational skills when cataloguing and categorizing data collected over multiple decades and collaboratively creating an online catalogue.
- Exhibited geological and technical skills when interpreting and categorizing data.

**Library Student Assistant** Feb 2016 – Dec 2017

Curtin University – Bentley Campus

- Exhibited excellent problem solving, listening and communication skills, particularly when working with multiple clients during busy hours i.e. start of semester and study week.
- Displayed attention to detail, precision and great work ethic when cataloguing books and documents during collection shifts.

**Geology Vacation Student** Dec 2014 – Feb 2015

Newmont Mining – Asia Pacific (Gold Mining)

- Displayed initiative, efficiency and excellent communication skills when working on two lean belt projects targeting the drilling process, working with drilling contractors to streamline the processes involved in extraction and production of gold.
- Exhibited excellent attention to detail, patience and precision when sorting and logging 40 years of hand-written documents into an excel spreadsheet for future preservation of their records.
- Displaying safety, accurately comprehending and following instructions, and attention to detail when performing tasks underground in a very dangerous environment. Taking responsibility for projects monitoring gold grades and generating weekly reports on progress.
- Excellent use of computing software i.e. excel and modelling software e.g. Vulcan, and excel to develop drill holes, logging, checking lab results and correlating archived data

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sheets.

- Research skills displayed when logging exploration holes to interpret deformation events and gold placement through use of visual observations, previously correlated data and modelling software.

### **Pharmacy Assistant**

Optimal Pharmacy Plus, Hamilton Hill & Coolbellup stores  
Cannington Medical Centre Pharmacy

Nov 2012 – Nov 2014  
Dec 2016 – March 2017

- Demonstrated accuracy and efficiency when receiving cash and providing correct change to customers ensuring end-of-day till reconciliations balance.
- Exhibit excellent listening and communication skills when serving customers, requiring careful analysis and consideration, ensuring the best advice is given.
- Displaying methodical, logical and organisation skills when meeting deadlines i.e. checking expiry dates, tags and promotions, stock taking, and cleaning.

## **TEACHING AND RESEARCH EXPERIENCE**

### **Teaching Assistant: Planetary Science Unit (Volunteering)**

Aug 2020 – Nov 2020

Curtin University, Department of Earth and Planetary Science – Bentley Campus

- Demonstrated effective teaching and communication skills when advising multiple classes and individual students from various disciplines (i.e. geologists, physicists), on complex topics through use of diagrams, verbal communication and written communication (i.e. whiteboard).
- Scientific topics taught at introductory level: classification of meteorites, oxygen isotopes, carbonaceous chondrites, extraterrestrial organics, habitability of life.

### **Lunar and Planetary Science Intern**

Jun 2017 – Aug 2017

Lunar and Planetary Science Institute and Johnson Space Centre, NASA.

- Displayed time management, organizational and research skills when conducting a research project coordinating four different techniques.
- Exhibited publishing capabilities when executing results and publishing an abstract at the 33<sup>rd</sup> Summer Intern Conference and later invited to the 2018 LPSC conference.
- Effective listening and communication skills when learning new research skills and collaborating with researchers of various disciplines.

### **Sir Charles Court Young Leaders Program Mentor.**

June 2016 – July 2017

Curtin University

- Exhibited coordination and teaching skills when designing and coordinating lesson plans and executed them for groups of 30 students.
- Excellent leadership skills when mentoring students in team work, public speaking, political and cultural interactions.
- Displayed mentorship skills when personally mentoring smaller groups of 6 in a variety of topics and teaching them evaluation skills.

### **Geology Student - Palaeontology**

Oct 2014 – Date

WA Museum research Facility

- Developed interpersonal skills through interaction with different members of staff within the research division of the museum.
- Displayed patience, accuracy and precision when cleaning and preserving the skull of a

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Brontotherium from North America, with a tooth pick and water without damaging it.

- Showed an ability to accurately comprehend and follow instructions when entrusted to remove sediment with an electric drill from the spine of their most preserved fossil.

**Volunteer, Builder, Teacher in Africa (Tanzania and Zanzibar)** Jan 2014 – Feb 2014  
GIVE (Growth International Volunteer Excursions.)

- Displayed excellent leadership, problem solving and team work skills when building a school in an area without water, power and no building materials.
- Developed cultural awareness taking on bold tasks and an open mind working in a team of Australians, Americans and Africans who did not speak English and had different customs.
- Showed innovative creativity and sustainability principles to develop and design the school using their local rubbish as building materials and in the process taught the locals how to recycle their waste. My work inspired education and sustainability in the locals.
- Displayed and developed organizational skills when planning and establishing lessons for students with minimal English-speaking experience, in four high schools with classes of 75. Teaching Computing, English and Sport, analysing, adapting and developing in-depth perspective into their culture and quickly forming solutions to language obstacles.
- Displayed fitness and determination in climbing Mt Kilimanjaro as the youngest on the climb, with no previous experience, climbing the toughest track.

## **VOLUNTEER WORK**

**Volunteer, Ambassador, Leader.** July 2012 - Date  
The Literature Centre

- Demonstrated effective management, organisational and leadership skills in co-ordinating volunteer shifts for stock take, cash handling and customer service, ensuring efficient completion of tasks and an effective learning experience.
- Exhibited initiative with an energetic and driven personality, considering the authors in my tasks of preparation and organization of cleaning, setting up and serving food at the annual 'National Celebrate Reading Conference' Fremantle resulting in solutions to many issues and satisfied delegates.
- Ambassador: Posters and advertising for the centre.

**John Curtin Leadership Academy.** July 2015 – Nov 2015  
350.org Project

- Displayed initiative and problem solving skills when developing the project while maintaining the image of Curtin university, JCLA and the not for profit.
- Developed time management balancing the project with other studies and organisational skills managing 5 smaller projects within the larger ones including third party financials.
- Developed team work throughout the semester working in a team of 8 to achieve our goals.
- Displayed excellent communication and professional skills when communicating with university stakeholders including the Vice Chancellor and Chief Financial Officer.

## **AWARDS, HONORS AND FUNDING**

**TIGeR Small Grant Application** April 2019

- Awarded towards the cost of attending the 82<sup>nd</sup> Annual Meeting of the Meteoritical Society: \$2000 awarded

**TIGeR Small Grant Application** April 2018

- Awarded towards the cost of attending the 49<sup>th</sup> Lunar and Planetary Science Conference:

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\$1800 awarded

**Winner of the VSSEC-NASA Australian Space Prize: Geology Category** 2017

- Awarded to the top fourth year planetary science thesis in Australia
- Runner up for National award across all STEM disciplines

**LPI Summer Internship Participant** June 2015 – Aug 2015

Lunar and Planetary Institute and NASA

- Selected as one of 14 internationally across all STEM disciplines

**John Curtin Leadership Academy** August 2015 – Nov

2015 Curtin University

**Self-Leadership Award** Feb 2015 – July 2015

Curtin University

- Awarded for completing 6 months of leadership training and volunteering in the community.

**Team Leadership Award** Feb 2015 – July 2015

Curtin University

- Awarded for completing 6 months of leadership training and volunteering in the community.

**Employability Award** July 2014 – Nov 2014

Curtin University

- Awarded for completing 40hrs work experience at the WA museum research facility and a year of intensive work equivalent to an additional unit.

**Top Chemistry Assignment within Science and Engineering** 2013

Assignment still used as exemplar example for chemistry units

**Newmont Tertiary scholarship** Feb 2013 - Nov 2016

\$3,000 AUD annually for duration of undergraduate degree

**‘Sir Charles Court Young Leaders Program’ Award** July 2010

Curtin University

- Awarded to the top 30 students in year 10 Western Australia, based on academia, community volunteering work and leadership skills.

**Seton Catholic College Annual Music Award winner** 2009 – 2012

**Certificates of Excellence** 2009 – 2012

Business; English; Mathematics; Music; Science

## **EXTRA-CIRRICULAR & COMMUNITY INVOLVEMENT**

**Travelled to:** America, Africa, Scotland, New Zealand and all Australian states (Except TAS)

**Volunteer at various High and Primary Schools** 2017 - 2020

**Techtrails Presenter** 2020

**Perth Science Festival Volunteer** 2019

**Vox Pop Girls Science Festival Volunteer** 2019

**Keynote Speaker at 2018 STAWA Gala** 2018

**Volunteer ‘Innovator’s Tea Party’** 2018

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<b>Volunteer ‘Science Café’, SciTech</b>	2018
<b>Frederick Irwin year 11 Careers Day</b>	2017
<b>Three Minute Thesis Competition Participant</b> Curtin University Finalist	2017
<b>Climbed and Summited Mt Kilimanjaro, Tanzania, Africa</b> 3 <sup>rd</sup> tallest mountain in the world and tallest free Standing Mountain.	Feb 2014
<b>Member of Intercollegiate Mining Games</b> National and International competitions	March 2014 – 2017
<b>Leader of the Concert Band &amp; Peer Support Leader</b> Seton Catholic College	Feb 2011 – Dec 2012
<b>‘Sir Charles Court Young Leaders Program’ Mentor</b> Curtin University - Keynote Speaker at Graduation 2017	July 2016 & 2017
<b>Student mentoring/Community concerts/Violin Workshops</b> Suzuki Talent Education Association of WA	Jan 2008 – Dec 2012
<b>Suzuki Violin level 5 (AEMB level 7)</b> Suzuki Training and Education	Jan 1999 – Dec 2012
<b>TEE Trombone (AEMB level 7)</b> Peter Chan	Feb 2003 – Dec 2012