ADITYA CHOPRA

Curriculum Vitae

Visiting Fellow
Planetary Science Institute
The Australian National University
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Research & Education Experience

Astrobiology Researcher, NASA Frontier Development Lab **July & August 2018**

- Developed a framework to couple generalised biology and atmosphere dynamics to evaluate the habitability of exoplanetary atmospheres
- Worked with a team of scientists and machine learning experts in a 8-week research accelerator supported by NASA, the SETI Institute and Google Cloud

Post-doctoral Visiting Fellow, Australian National University **2018**

- Research focuses on the study of the origin and evolution of life on Earth by analysing the elemental composition of life forms and the role of biology in maintaining habitability of planets
- Developing an online EdX MOOC course on Astrobiology

Residential Life Manager, UniLodge@ANU **2017**

- Deputy Head of Hall at the largest residence at the university (2000 students)
- Managed a team of 80 individuals, with the group providing pastoral care in a residential setting
- Managed the Community Spirit Program ($250,000 fund) supporting a diverse group of students
- Developed comprehensive well-being and academic initiatives aligned with the university's vision
- Implemented new administrative, accounting and incident management processes to enhance student experience and improve business practices

Australia Awards Endeavour Post-doctoral Research Fellow **2016**

- University of Washington (Mentor: John Baross) & University of Hawaii (Mentor: Mike Mottl)
- Investigated the types of hydrothermal systems most likely to host the earliest life forms on Earth

PhD Candidate: Planetary Science Institute, Australian National University **2009 - 2015**

- Thesis Title: *The Origin and Evolution of Life on a Pale Blue Dot: Astrophysical, Geochemical and Biological Constraints on Habitability* (Supervisor: Charles H. Lineweaver)
- Quantified major element fractionation episodes during planetary formation and subsequent processes that led to Earth's biosphere
- Indirectly estimated the bulk elemental composition of the Last Universal Common Ancestor from elemental abundances in extant organisms
- Identified the most fundamental features common to all life on Earth and constraints for habitable zones on Earth and other planets

Bachelor of Science (1st class Honours), Australian National University **2008**

- Undertook research under the supervision of Charles H. Lineweaver studying the elemental abundances of life on Earth, the Oceans and the Sun
- Performed analysis of the elemental composition of *E. coli* to identify resources required for future studies of the elemental composition of bacteria and archaea
- Completed courses in Planetary Geology, Astrophysics, Chemistry and Science Communication

Bachelor of Science: University of Western Australia **2005 - 2007**

- Consistently achieved High Distinctions for the 2nd and 3rd years with overall GPA of 6/7
- Completed courses in Chemistry, Mathematics, Physics, Astronomy and Biology

Research (3 month project): with Prof. John Watling, University of WA **2007**

- Performed elemental analyses of marine sponges and studied nutrient uptake in mussels to identify relationships between metabolic pathways and the composition of its environment

Summer Research Scholarship: with Dr. Charles H. Lineweaver, ANU **2007**

- Research on the abundance of elements in organisms in the context of the evolution of life

Undergraduate Researcher: with Dr. Susan Barker, UWA **2005 - 2007**

- Identified genes contributing to beneficial symbiosis between plants and fungi

Student Research Scheme: with Dr. Patrick Finnegan, UWA **2004**

- Confirmed the identity of transcription factor cDNA involved in mitochondrial protein synthesis

Secondary Education: Rossmoyne Senior High School, Perth, Australia **2004**

Honours & Awards

- Most Creative Presenter - 2018 NASA Artificial Intelligence Frontier Development Lab.
- Most Unusual / Quirky Story Award – ANU Media Awards 2016.
- Best Oral Presentation, Gordon Research Seminars on the Origins of Life in 2016.
- Recipient of Australia Awards Endeavour Post-doctoral Research Fellowship in 2015.
- Best Postgraduate Oral Presentation - Runner Up, 2015 Australian Space Science Conference.
- Awarded 2014 Resident of the Year by UniLodge@ANU.
- Student of the Year Finalist at the 2013 ANU Alumni Awards.
- Best Talk Prize at the 2014, 2012 and 2011 Stromlo Student Christmas Seminars.
- Australian delegation member of 2014 Commonwealth Science Conference (India) and 2013 Lindau Nobel Laureate Meeting (Germany).
- 2012 Robert Hill Memorial Prize for displaying excellence in research, good communication skills, proven publications record, and the ability to communicate research to a broad audience.
- Best Postgraduate Oral Presentation at the 2012 Australian Space Science Conference.
- 1st Prize and Audience Favourite Prize at the 2012 "3 Minute Thesis Competition" at ANU (represented the university at the national competition).
- Vice-Chancellor's 2011 Award for Community Outreach recognising the contributions of the Student Outreach Team at the Research School of Astronomy and Astrophysics at ANU.
- Community Spirit Award from UniLodge@ANU for outstanding contributions during 2011.
- Best Poster Award for two posters presented at the 2011 European Workshop on Astrobiology.
- 3rd prize at *The Space Factor* student contest at the 2011 European Workshop on Astrobiology.
- 2nd prize for poster presented at the ANU 2010 ResearchFest.
- Australian Postgraduate Award for PhD studies commencing in 2009.
- Honours Year Scholarship at the Australian National University in 2008.
- Fluor Foundation scholarship by Scholarship America in 2008.
- 'Best Chemical OH&S Poster' in 2007 at the University of Western Australia in 2008.
- Summer Research Scholarship at the Australian National University in 2007.
- 'Most Promising Science Communicator', Western Australian 2004 CSIRO Student Research Scheme

Professional Memberships

Student status until 2015:

- Geological Society of Australia
- Geochemical Society
- Astronomical Society of Australia
- International Society For The Study Of The Origin Of Life And Astrobiology Society