

# Samuel Hinton

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## Education

- 2016–Now **Doctor of Philosophy** University of Queensland  
Analysing supernovae in the Dark Energy Survey using Hierarchical Bayesian models to help constrain the nature of dark energy.
- 2010–2015 **Bachelor of Science** (Physics)(Hons, 1<sup>st</sup>) University of Queensland  
Thesis: Analysed the Baryon Acoustic Oscillation signal imprinted in the large scale structure of the universe using the WiggleZ survey. Won the Astronomical Society of Australia's award for best Australian Astrophysics honours thesis of the year.
- 2010–2014 **Bachelor of Engineering** (Software)(Hons, 1<sup>st</sup>) University of Queensland  
Thesis: Created the first online client-only web-application to compute redshifts from telescope spectra. Won the GroudProbe prize, IEEE student thesis prize and IET student prize.

## Experience

- 2020 **University of Queensland** Brisbane, Queensland, Australia  
*Postdoctoral Researcher*  
Continued research in the areas of supernova cosmology and large scale structure, focusing heavily upon analysis pipelines and systematics control through efficient use of simulations and mocks.
- 2019 **SuperDataScience** Sunshine Coast, Queensland, Australia  
*Course Instructor*  
Created a course on statistical analysis in Python for students. Focused on applied statistics and utilisation of modern code packages, with attention given to visual output and workflows for continuous validation of methodology.
- 2017, 2016 **Lawrence Berkeley National Laboratory** Berkeley, California  
*Research Fellowship*  
Research fellowship to work on Bayesian Hierarchical Modelling and its applications to Supernova Cosmology. Specifically, investigating how to use high dimensional hierarchical models to model individual supernova instead of populations to provide better constraints on cosmology using supernova discovered by the Dark Energy Survey.
- 2015–2016 **Gemini & Australian Astronomical Observatory** La Serena, Chile  
*Research Intern*  
Utilised photometric data of Maffei 1 to determine globular cluster candidates and their properties for spectroscopic follow-up. Utilised data reduction pipelines, automated analysis methods in Python, and applied machine learning techniques to perform object classification.
- 2010–2014 **GBST** Brisbane, Queensland, Australia  
*Software Developer*  
Developed business intelligence reporting solutions, designing and developing server and client based web application code, creation of large scale SQL queries, optimising queries, databases and applications for network, processing and memory constraints, developed back-end server code and front-end web applications.

## Noteable Awards

- 2019 **Lindau Nobel Laureate Delegate** Representing Australia at LINO19. Australian Academy of Science
- 2019 **Future Superstar Award** Science's highest performing PhD student. University of Queensland
- 2016 **Bok Prize** Best astrophysics honours thesis in Australia. Astronomical Society of Australia
- 2016 **Australian Postgraduate Award** Australian Government
- 2016 **Science Faculty Graduate of the Year** University of Queensland

2016	<b>Australian Institute of Physics Prize</b>	Top physics graduate.	University of Queensland
2016	<b>University Medal (Science)</b>		University of Queensland
2015	<b>Australian Gemini Undergraduate Summer Studentships</b>		Australian Astronomical Observatory
2015	<b>AAO Honours Scholarship</b>		Australian Astronomical Observatory
2015	<b>University Medal (Engineering)</b>		University of Queensland

## Other Awards

2015	<b>Rhodes Scholarship Finalist</b>		Oxford University
2015	<b>A.W. Oakes Scholarship</b>		St John's College
2015	<b>Harriet Marks Bursary</b>	Academic merit in science honours.	University of Queensland
2015	<b>10x Deans Commendation</b>		University of Queensland
2015	<b>Helen Thompson Prize for All Round Excellence</b>		St John's College
2015	<b>IET Student Prize</b>	Outstanding academic success.	The Institution of Engineering and Technology
2015	<b>David Andrew Krnak Memorial Prize</b>	Top engineering graduate.	University of Queensland
2014	<b>UQ Future Leader</b>		University of Queensland
2014	<b>IEEE Student Thesis Prize</b>	Best final year thesis.	IEEE
2014	<b>GroundProbe Prize</b>	Best final year thesis.	University of Queensland
2014	<b>RWH Hawken Scholar</b>		University of Queensland
2014	<b>UQ Summer Research Scholarship</b>		University of Queensland
2012	<b>Walter Bruce Darker Scholarship</b>		University of Queensland
2012	<b>Exxon Mobil Achievement Award</b>	Top mechanical engineering student.	University of Queensland
2011	<b>Alstom Prize</b>	Top electrical engineering student.	University of Queensland
2010	<b>UQ Academic Excellence Scholarship</b>		University of Queensland
2010	<b>ICT Enabling Scholarship</b>		University of Queensland
2010	<b>John Black Prize</b>		University of Queensland

## Communication

2020	<b>NYSF Guest Panelist</b>		National Youth Science Forum
	Shared my personal journey in science outreach, and presented on how to give effective presentations.		
2019-2017	<b>ScopeTV Guest Scientist</b>		ScopeTV, Channel 10
	Helped script, narrate and appear in ScopeTV educational astronomy episodes.		
2019	<b>Science Says! Scientific Panelist</b>		World Science Festival
	Panel scientist for Science Says, a comedy science show for Brisbane's World Science Festival.		
2019	<b>Probably Science Podcast Guest Scientist</b>		Probably Science Live Podcast and Comedy Show
	Guest scientist for Probably Science, joining the previous guests of Neil deGrasse Tyson, Sean Carroll and more.		
2019	<b>2SER Radio Scientific Correspondent</b>		Radio, 2SER
	Monthly scientific and astronomy updates.		
2018	<b>BrisScience Presenter</b>		BrisScience & UQ
	Invited to talk at the monthly BrisScience event on the dark side of the universe.		
2018	<b>Australian Survivor Invited Contestant, Academic Champion</b>		Endemol Shine
	Cast as the academic champion for the 'Champions v. Contenders' season of Australian Survivor.		
2018-2017	<b>School Guest Presenter</b>		Clayfield College, Gumdale State School
	Talks to primary and secondary students on astronomy, science, STEM and career pathways.		
2019-2017	<b>Science Communicator</b>		Pint of Science, Physics in the Pub
	Gave public talks to a general audience about various topics in astronomy.		
2017	<b>Invited Presenter</b>		Research Education and Development Retreat
	Invited presenter at a progressional development program for physics PhD, honours and undergraduate students.		

2017	<b>Workshop Organiser, Host and Presenter</b> Created and presented a code workshop focusing on open-source science run across Australia.	CAASTRO Code Workshop
2017	<b>Battle of the Brains Panel Scientist</b> Invited participant in a games panel discussion for physicists during National Science Week.	National Science Week
2017	<b>World Science Festival Tour Guide</b> Scientific tour guide for the Large Hadron Collider exhibit during the World Science Festival.	Queensland Museum & UQ
2017	<b>FameLab Australia Scientist</b> State finalist FameLab scientist. Public communication through radio interview and stage presentation.	British Council
2016	<b>Guest Scientist, An Evening with Dr Lisa Randall</b> Gave the opening speech for the Brisbane event, talking about the exciting future of astronomy.	ThinkInc
2016	<b>UQ Science Demo Troupe Member</b> Joined the UQ Science Demo troupe to create resources for the group and participate in UQ demonstrations.	University of Queensland
2016	<b>Uluru Astronomer in Residence</b> Accompanied Sky Tours to answer scientific questions from the public and gave public lectures on popular astronomy topics.	CAASTRO

## Teaching

2019	<b>Frontiers of Astrophysics Guest Lecturer</b>	University of Queensland
2018	<b>Introduction to Astrophysics Guest Lecturer</b>	University of Queensland
2018	<b>Cosmology Tutor and Guest Lecturer</b>	University of Queensland
2018	<b>Supervisor - Capstone Project</b>	University of Queensland
2017	<b>Computational Physics Tutor</b>	University of Queensland
2017	<b>Computational Physics Content Creator</b>	University of Queensland
2017	<b>Supervisor - Summer Project</b>	University of Queensland
2015	<b>5-Minute Physics Content Creator</b>	University of Queensland

## Academic Presentations

Oct 2019	<b>Pippin: A pipeline for SN Ia cosmology</b>	SCAM
Jul 2019	<b>Barry - A BAO model fitting framework</b>	Python in Astronomy
Mar 2019	<b>The path towards Photometric Supernova Cosmology with DES</b>	Cosmology on Safari
Feb 2019	<b>Hitting the Limits of Supernova cosmology</b>	ANITA
Nov 2017	<b>Coding Practises for the Busy Astronomer</b>	CAASTRO
Jun 2017	<b>Hierachical Bayesian Models for Supernova Cosmology</b>	Lawrence Berkeley National Lab
Dec 2016	<b>Introduction to git and code management</b>	University of Cambridge
Dec 2016	<b>Hierachical Bayesian Models for Supernova Cosmology</b>	University of Southampton
Dec 2016	<b>Hierachical Bayesian Models for Supernova Cosmology</b>	University of Portsmouth
Nov 2016	<b>Sound waves in Space: Wigglez and the BAO</b>	Swinburne University of Technology
Aug 2016	<b>Publishing Packages in Python</b>	University of Queensland
Aug 2016	<b>ChainConsumer: Plots and LaTeX from MCMC chains</b>	CAASTRO
May 2016	<b>Hieracrhical Bayesian Models for Supernova Cosmology</b>	Standford University
Feb 2016	<b>Detecting Globular Clusters in Maffei 1</b>	Gemini Institute
Nov 2015	<b>Marz - Redshifting software inside your browser</b>	OzDES Workshop