

Joshua P. Ellis

Physics PhD Candidate

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Education

Doctor of Philosophy (Physics)

Jan 2017–

THE UNIVERSITY OF MELBOURNE, AUSTRALIA

- Under the supervision of Prof. Volkas.

Masters of Science (Physics)

Feb 2015–Dec 2016

THE UNIVERSITY OF MELBOURNE, AUSTRALIA

- Half coursework and research;
- Under the supervision of Prof. Volkas, looking at the phenomenology of an E_6 -inspired seesaw model.

Bachelor of Science & Diploma of Mathematical Sciences

Feb 2011–Nov 2014

THE UNIVERSITY OF MELBOURNE, AUSTRALIA

- Physics major and specialization in pure mathematics;
- First class honours average.

Research Experience

Synchrotron Beam Halo Measurement

Aug–Nov 2013

THE UNIVERSITY OF MELBOURNE, AUSTRALIA

- Conducted a research project at the Australian Synchrotron as part of a Melbourne University course. Used a metal-semiconductor-metal photodiode in order to observe the beam halo whilst also using a coronagraph so as to reduce glare from main bunches.

LHC Level 1 Trigger

Jul–Aug 2013

CERN, GENEVA, SWITZERLAND

C++

- Developed a level-1 trigger for the multiband instability monitor providing detection of instabilities during their onsets and estimates of their lifetime. Report available [here](#).

Cosmological Velocity Fluctuations

Dec 2012–Feb 2013

SWINBURNE UNIVERSITY, AUSTRALIA

Python, Numpy, Scipy

- Worked under Prof. Chris Blake and Dr. Jun Koda through a research scholarship. Studied cosmological velocity field fluctuations, trying to determine how to best measure a particular constant both through theory and by analysing simulated data.

Publications

- 2017 J. P. Ellis and R. R. Volkas, **Phenomenological analysis of an E_6 -inspired seesaw model**, *Phys. Rev. D* **96** 10.1103/PhysRevD.96.095016, [arXiv:1709.01203](#).
- 2016 J. P. Ellis, **TikZ-Feynman: Feynman diagrams with TikZ**, *Comput. Phys. Commun.* 10.1016/j.cpc.2016.08.019, [arXiv:1601.05437](#).

Professional Experience

Tutor / Demonstrator

Mar 2013–Present

THE UNIVERSITY OF MELBOURNE, MELBOURNE, AUSTRALIA

- Wrote summary notes for 1st year physics in 2013.
- Rewrote all the 3rd year computational labs. Made the lab notes language-agnostic, wrote skeleton code in Python, and introduce the students to the concept of classes.
- Head tutor for electromagnetism in 2017–2018. Updated all the tutorials, and wrote all assignments and exams.
- Taught various tutorials and labs, including: 1st year labs in 2015–2017; 1st year tutorials in 2017; 3rd year labs in 2017–2018, and electromagnetism in 2017–2018.
- Exam marking 2015–2018 (various subjects from 1st year to masters).

Database Administrator

Jun 2014–Present

INDIGO NORTH HEALTH, RUTHERGLEN, AUSTRALIA

Python, Django

- Upgraded the previous single-user Access database to a multi-user system in Django and continued to provide support to accommodate for changing needs.

Web Developer & Designer

Feb–Mar 2014

RUTHERGLEN CLOCKS AND WATCHES, RUTHERGLEN, AUSTRALIA

Drupal

- Created a website for my parents' business. Created with Drupal and hosted on AWS.

Administrative Assistant

Jun 2011–Jul 2012

INDIGO NORTH HEALTH, RUTHERGLEN, AUSTRALIA

- Re-organised all personnel files in preparation for an audit and performed a gap analysis for managers.
- Consolidate various spreadsheets/ad-hoc lists and created three databases in Access to store staff details and training records, volunteers' details, and residents' information.
- Created an assets register and consolidated the numerous existing ad-hoc lists. Introduced systems and procedures to record assets into the future.

Other Experiences

Australian School for Accelerator Physics

Jan 2014

AUSTRALIAN SYNCHROTRON, AUSTRALIA

- Attended the Australian School for Accelerator Physics (ASAP); a two week course consisting of morning lectures and afternoon practical activities all related to the design and operation of particle accelerators.

Volunteer Teacher

Jun–Dec 2010

PENTECOST ISLAND, VANUATU

- Volunteered in a primary school in a **remote village** on the island of Pentecost, Vanuatu. Lived in a bamboo house with thatched roof, no running water and only a firepit to cook with. Taught students English, music, and some general sciences.

Honors & Awards

- 2015 **N. D. Goldsworthy Scholarship for Physics** The University of Melbourne
- 2013 **Scolarest Scholarship** Janet Clarke Hall
- 2012 **Vera Moore Scholarship** Janet Clarke Hall
- 2011 **Vera Moore Scholarship** Janet Clarke Hall
- 2011 **Dean's Honour List for Science** The University of Melbourne
- 2009 **Outstanding Academic Achievement Award** Charles Sturt University Faculty of Education
- 2009 **Dux** Rutherglen High School
- 2007 **Kwong Lee Dow Young Scholar** University of Melbourne

References

Provided upon request.