

Keiran Rowell | Résumé

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in www.linkedin.com/in/keiran-rowell-3176996a

Employment

Postdoctoral Research Associate

School of Chemistry USYD

2020–current

Preparing research papers. Mentoring PhD students. Multiconfigurational quantum chemistry calculations.

Casual Science Teacher

Matrix Education

2016–2020

Student experience questionnaire 2-year average : **4.7/5**

Top quality HSC tuition. Classroom & online (Matrix+) lessons, quiz marking, 'Max Series' workbooks.

Postgraduate Teaching Fellow & Tutor

School of Chemistry UNSW

2016–2018, 2019–2020

1st year tutorials, 3rd year instructional resources, mentoring, exam marking, outreach, 'Rising Star' award.

Laboratory Demonstrator

School of Chemistry UNSW

2014–2015, 2020

Laboratory teaching, supervision, and marking, for 1st, 2nd and 3rd year chemistry students.

Education

PhD - Computational Chemistry

University of New South Wales

2016–2020

Thesis Title: [Structure–Activity Relationships for Carbonyl Photolysis](#)

Supervisors: Prof. Scott Kable, Prof. Meredith Jordan

Assessment: **A,A** — All categories 'Outstanding' — Nominated for a Dean's Award

Thesis summary: Used high performance computing to simulate the reactions of atmospheric molecules with UV sunlight. Developed a framework of structure–activity relationships that allow accurate, no-cost estimates of photoreaction energies based upon molecular structure.

B.Sc. (Adv.) - Chemistry - Honours Class 1 - Angyal Prize

University of New South Wales

2011–2014

Programming Experience

Python

- Developed instructional resources for Python and Jupyter notebooks in 3rd year chemistry
- Created custom scripts for data exploration and visualisation with Pandas and Matplotlib
- Wrote code to search large output files and plot 1000s of pair-wise DNA interaction energies

High Performance Computing

- 5+ years experience in Linux and high performance computing environments
- Bash scripting, scheduling, command line tools, regular UNSW ResTech seminar attendee

C

- Bioinformatics (BINF3020, **HD**), Comp. sci. (COMP1917, **DN**), data structures & algorithms

Fortran

- Worked on in-house Fortran code, compilation, debugging, variable modification

Version Control

- Initiated and implemented GitHub Enterprise codebase migration for the Jordan research group

Teaching and Mentorship Highlights

- 3rd year physical chemistry – class demonstrator and coding facilitator — **satisfaction rose 65% to 94%**
- 1st year chemistry – tutor and laboratory demonstrator — tutor feedback form average **4.6/5**

- o Mentored many Honours and PhD students in research, writing, and computing skills

Presentation Highlights

Group and 'Super-group' organiser: Organised weekly group meetings, and monthly 'super-group' meetings, sourcing academic speakers, coordinating schedules. Ran masterclasses on computing and visualisation.

APATCC 2019 (*volunteer, poster*) USYD - Sydney
Sep. 2019
Asia-Pacific Association of Theoretical and Computational Chemists

ISTCP-X (*poster*) UiT - Tromsø
Jul. 2019
10th Triennial Congress of the International Society of Theoretical Chemical Physics

ACCOMC 2018 (*poster*) CSIRO - Aspendale
Dec. 2018
Atmospheric composition & modelling conference for Australasian region

Award Highlights

Rising Star - PhD Casual Teacher 2018
UNSW Faculty of Science
Awarded to two casual PhD tutors who have demonstrated educational excellence in a single year

Poster presenter prize 2015
Association of Molecular Modellers of Australia
Best Honours-level poster presenter

Angyal prize 2014
School of Chemistry UNSW
Top mark in Chemistry Honours

Bosworth prize 2013
School of Chemistry UNSW
Equal 1st in third year Physical Chemistry

Publications (refer to my [Google Scholar](#) page)

Computer Skills

Programming: Python, Bash, C, Fortran

Documents: Word, L^AT_EX, Overleaf

Analysis: Excel, Python, Pandas

Graphics: Matplotlib, Inkscape, GNU IMP

References (details upon request)

Supervisors

- o Prof. Scott Kable (Supervisor - HoS Chem UNSW)
- o Prof. Meredith Jordan (Co-supervisor - USYD)
- o Dr Kim Lapere (Teaching Fellow Coordinator)

Tutoring Employment

- o Dr Alex Argyros (Head of Science)
- o Dr Peter Jurd (Head of Junior Science)
- o Vivian Law (Head of Chemistry)