

# CV: Mathew Lipson

## Undertaking a PhD in urban climate model development at UNSW Sydney

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Affiliation: **UNSW Sydney**, Climate Change Research Centre (CCRC) and ARC Centre of Excellence for Climate System Science

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Current research: Developing new components of an urban environmental model, exploring interdependence between weather, urban form and building energy demand.

### EDUCATION

ongoing **PhD: Climate Science Research.** UNSW Sydney, Australia

2011-2014 **Bachelor of Science.** UNSW Sydney, Australia  
Majored in Physics and Astronomy. Honours in Climate Science (1<sup>st</sup> Class).

2009 **Architect Professional Registration.** NSW Board of Architects No. 8364.

2005 **Bachelor of Architecture.** University of Sydney.

### AWARDS

2017 **AMOS Conference Student Poster Presentation.** Honourable mention.

2016 **Research Student Award, UNSW Postgraduate Council.**  
For creating a lively research environment and supportive student atmosphere.

2016 **Postgraduate Review Presentation Prize.**  
Best talk, UNSW Climate Change Research Centre.

2015 **Australian Meteorological and Oceanographic Society State Award.**  
2014 New South Wales Award for Academic Excellence.

2014 **University of New South Wales Research Excellence Award.**  
First in cohort, School of Biological, Earth and Environmental Sciences.

### PUBLICATIONS

2018 **Lipson**, Thatcher, Hart, Pitman. *A building energy demand and urban land surface model.* Quarterly Journal of the Royal Meteorological Society

2018 Turney, Palmer, Maslin, Hogg, Fogwill, Southon, Fenwick, Helle, Wilmshurst, McGlone, Ramsey, Thomas, **Lipson**, Beaven, Jones, Andrews, Hua. *Global Peak in Atmospheric Radiocarbon Provides a Potential Definition for the Onset of the Anthropocene Epoch in 1965.* Scientific Reports 8, 3293.

2018 Palmer, Turney, Fogwill, Fenwick, Thomas, **Lipson**, Jones, Beavan, Richardson, Wilmshurst. *Growth response of an invasive alien species to climate variations on subantarctic Campbell Island.* New Zeal. J. Ecol.

2017 **Lipson**, Hart, Thatcher. *Efficiently modelling urban heat storage: an interface conduction scheme in an urban land surface model (aTEB v2.0).* Geosci. Model Dev.

2017 Turney, Fogwill, Palmer, van Sebille, Thomas, McGlone, Richardson, Wilmshurst, Fenwick, Zunz, Goosse, Wilson, Carter, **Lipson**, Jones, Harsch, Clark, Marzinelli, Rogers, Rainsley, Ciasto, Waterman, Thomas, Visbeck.

*Tropical forcing of increased Southern Ocean climate variability revealed by a 140-year subantarctic temperature reconstruction.* Clim. Past

- 2016 Turney, McGlone, Palmer, Fogwill, Hogg, Thomas, **Lipson**, Wilmshurst, Fenwick, Jones, Hines, Clark. *Intensification of Southern Hemisphere westerly winds 2000–1000 years ago: evidence from the subantarctic Campbell and Auckland Islands (52–50°S).* J. Quaternary Sci.
- 2016 Turney, Palmer, Hogg, Fogwill, Jones, Bronk Ramsey, Fenwick, Grierson, Wilmshurst, O'Donnell, Thomas, **Lipson**. *Multidecadal variations in Southern Hemisphere atmospheric 14C: Evidence against a Southern Ocean sink at the end of the Little Ice Age CO2 anomaly.* Global Biogeochem. Cycles.

## CONFERENCES

- 2018 *Applications for a new city-scale building energy demand model.* 10<sup>th</sup> International Conference on Urban Climate/ 14<sup>th</sup> Symposium on the Urban Environment, New York, U.S.A., 2018 (speaker)
- 2018 *A mixed physical/statistical city-scale energy demand model for Australia.* 25<sup>th</sup> National Conference of the Australian Meteorological and Oceanographic Society, Sydney, Australia (speaker).
- 2017 *Efficiently representing thermal processes in urban canopy models.* 97<sup>th</sup> American Meteorological Society Annual Meeting, Seattle, U.S.A. (poster).
- 2017 *From room to regional scales: developing a coupled energy demand & urban climate model.* 5<sup>th</sup> ARC Centre of Excellence for Climate System Science Workshop, Canberra, Australia (poster).
- 2017 *Improving urban climate models.* GlobalTech Global Fellows Programme, Berghausen, Germany (poster and attendee).
- 2016 *Improving the representation of heat storage in urban climate models.* National Conference of the Australian Meteorological and Oceanographic Society, Melbourne, Australia (speaker).
- 2016 *Developments in the aTEB urban land surface model.* 4<sup>th</sup> ARC Centre of Excellence for Climate System Science Workshop, Lorne, Australia (poster).
- 2015 *Adequately and efficiently representing heat conduction and storage for urban surfaces.* 9<sup>th</sup> International Conference on Urban Climate, Toulouse, France (speaker).
- 2014 *Efficiently simulating the impact of Australian urban areas on climate.* 3<sup>rd</sup> Australian Earth System Outlook Conference, Canberra, Australia

## SKILLS & OUTREACH

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| Leadership      | 2016 Student Representative; UNSW Climate Change Research Centre; Convener for weekly computational tips and tricks office meeting.  |
| Teaching        | Ran lab for 2 <sup>nd</sup> year undergraduate <i>Introduction to Atmospheric Science</i>  |
| Computing       | Programming proficiency in Python and Fortran, experience in others. Experience running various regional land/atmosphere models. Attendee at NCAR WRF Tutorial in Boulder, January 2017. Proficiency in computer aided design (CAD) and graphics manipulation.   |
| Public outreach | Lipson & Hart, <i>When the heat is on, we need city-wide plans to keep cool;</i> theconversation.com; 2017; <a href="http://bit.ly/2jKN2Hu">http://bit.ly/2jKN2Hu</a><br>Lipson, Contractor and Goldie, <i>Is it hot right now?</i> <a href="https://isithotrightnow.com">https://isithotrightnow.com</a><br>Lipson, <i>The Urbanist</i> (personal research blog), <a href="https://theurbanist.com.au">https://theurbanist.com.au</a> |