

Curriculum Vitae

Amy L. Parker

Current Address Department of Spatial Sciences, Western Australia School of Mines, Curtin University, Perth, Western Australia.
Mobile telephone +61 426 052 221
Email amylauraparker@gmail.com
Date of Birth 03/03/1990

My expertise lies in the application of InSAR data to monitor, measure, and understand ground displacements occurring due to natural and man-made phenomena. I am broadly interested in how InSAR can be implemented as a low-cost reservoir monitoring tool, and am currently involved in a project to measure subsidence of the Perth Basin due to groundwater abstraction. Other research interests include carbon capture and storage, hydrofracturing and induced seismicity.

Employment

Nov 2015–present Curtin University, Australia	Research Associate My research involves the application of InSAR data to monitor, measure, and understand ground displacements occurring due to natural and man-made phenomena. I am broadly interested in how InSAR can be implemented as a low-cost reservoir monitoring tool, and am currently involved in a project to measure subsidence of the Perth Basin due to groundwater abstraction.
July–Oct 2015 University of Bristol, UK	Postdoctoral Researcher Working with new satellite datasets to investigate volcanic crises Publication of research undertaken during my Ph.D.

Academic Background

2011–2015

University of Bristol,
UK

Ph.D. - Monitoring Cascade Volcanoes Using InSAR

My Ph.D. thesis received the Springer Thesis Award in recognition of scientific excellence and impact on research Development of strategies to improve the application of InSAR in challenging conditions (testing/developing advanced InSAR analysis techniques, application of weather models)

Modelling the long term geodetic response to magmatic intrusions (geodetic, thermal and viscoelastic modelling) Arc-wide assessment of the application of InSAR in the Cascades

2008–2011

University of
Liverpool, UK

First Class BSc. (Hons) Geophysics (Geology)

Mathematics and Physics trainings

Geology training: e.g. Geological Mapping, Structural Geology

Geophysical training: e.g. Signal Processing, Exploration Geophysics

Honours project: Geodetic and remote sensing investigation of the 2010 Haiti earthquake. Forward and inverse modelling of co/post-seismic deformation from InSAR. Assessment of the implications of the earthquake upon future seismic hazard

Training and Experience

Nov 2015

EAGE Workshop: Reservoir Monitoring using InSAR, Perth, Aus.

Jun–Aug 2012, 2013

USGS - Cascades Volcano Observatory, WA, USA.

Gained experience of working in a government run volcano observatory, building collaborations, establishing common research interests and identifying how my research may benefit volcano monitoring in the USA

Jun 2013

UNAVCO GPS Processing Course, CO, USA.

Used GAMIT/GLOBK software to process campaign and continuous GPS data

May 2013

Seismic/GPS Geophysical Fieldwork, Ethiopia.

Organised and carried out fieldwork as part of a two man team servicing seismic and continuous GPS networks at Ethiopian volcanoes

Aug 2012

UNAVCO InSAR Processing Course, CO, USA.

Consolidated knowledge of InSAR processing and error analysis

- Jul 2012** **Independent Fieldwork, Medicine Lake Volcano, CA, USA.**
Secured funding for, organised and led fieldwork based upon my work with InSAR
- 2011–2015** **Assisting with supervision of postgraduate research students**
University of Bristol MSc students and visiting Ph.D. students from Nigeria and Ethiopia. Teaching InSAR processing and basic interpretation using MATLAB.
- 2011–2015** **Teaching assistant for undergraduate classes.**
ArcGIS, Geological Mapping, MATLAB programming, Geophysical field-skills
- Jan 2011** **Geophysical exploration fieldwork, Tenerife, Spain.**
Data collection using gravity, magnetics, GPR, resistivity, seismics etc.
- Jun–Aug 2010** **USGS: National Earthquake Information Centre, CO, USA.**
Independently organised a funded internship with the USGS to produce regional seismic hazard summaries
- Jun 2009** **Geological mapping training, Cantabria, Spain.**
Comprehensive geological mapping course and independent mapping
- Scholarships and Awards**
- Dec 2015** Springer Thesis Prize
- Dec 2014** University of Bristol Alumni Foundation Grant
- Jun 2014** Volcanic and Magmatic Studies Group Conference Grant (VMSG, UK)
- Dec 2013** AGU Fall Meeting Student Travel Grant (American Geophysical Union, USA)
- Jun 2013** Volcanic and Magmatic Studies Group Workshop Grant (VMSG, UK)
- Jun 2013** UNAVCO Student Support Grant (UNAVCO, CO, USA)
- Jul 2012** UNAVCO Student Support Grant (UNAVCO, CO, USA)
- Jun 2012** Jack Kleinman Grant for Volcano Research (Community Foundation for Southwest Washington, WA, USA)
- 2011–2015** Natural Environment Research Council Ph.D. Studentship
- Jul 2011** NW Geological Society Prize for Geophysics (NW Geological Society, UK)
- 2008, -09, -10** Bibby Attainment Scholarship (University of Liverpool, UK)

- Public Outreach and Communication**
- May 2014** **Pint of Science International Science Festival**
Organised, publicised and hosted the Bristol leg of this international science festival designed to bring popular science to a public forum
- May 2014** **Geological Remote Sensing Group Newsletter**
Authored an article on advanced InSAR analysis methods
- April 2014** **University of Bristol Cabot Institute Blog**
Authored a blog post in response to the launch of the ESA Sentinel-1 and the compilation of global volcano deformation data
- May 2013** **Short film on Ethiopian Volcanoes**
Whilst on fieldwork in Ethiopia I was accompanied by a film crew and interviewed about geophysics, volcano monitoring and volcanic hazards
- 2012–2015** **University of Bristol, Cabot Institute Press Gang**
Coordinate press releases for upcoming publications from the School of Earth Sciences, several of which have been featured online/in the press
- Jun 2015** **Formal Science Communication (Selected Examples)**
British Geological Survey Meeting, Bristol, UK
Using InSAR to monitor ground subsidence and induced seismicity
- Sep 2014** **Wegener: Measuring and Modelling our Dynamic Planet, Leeds, UK**
Investigating the long-term geodetic response to magmatic intrusion at volcanoes in northern California
- Dec 2013, 2015** **American Geophysical Union Fall Meeting, CA, USA**
Investigating Subsidence at Volcanoes in Northern California Using InSAR
- Sept 2013** **European Space Agency Living Planet Symposium, Edinburgh, UK**
Monitoring Cascade Volcanoes Using Multi-Temporal InSAR
- Aug 2013** **USGS Cascades Volcano Observatory, WA, USA**
Monitoring Cascade Volcanoes Using InSAR: Medicine Lake Volcano
- Additional Skills**
- Membership** European Association of Geoscientists and Engineers; The Centre of Observing and Modelling Earthquakes, volcanoes and Tectonics (COMET); British Geophysical Association; American Geophysical Union; Geological Remote Sensing Group; Royal Astronomical Society

Datasets	SAR, LandSAT, digital elevation models, global weather models, maps, plus seismic and other geophysical datasets
Software	Experience with MATLAB, bash, FORTRAN and other scripting languages, GMT, Adobe Illustrator, ArcGIS and other graphics applications

Publications

Parker, A. L., InSAR Observations of Ground Deformation: Application to the Cascades Volcanic Arc, *Springer Thesis Series*, ISBN:978-3-319-39033-8, 2016

Parker, A. L., J. Biggs, Z. Lu, Constraining mechanisms of volcanic subsidence at Lassen Volcanic Center, CA, using InSAR, *Journal of Volcanology and Geothermal Research*, (doi:[10.2016/j.jvolgeores.2016.04.013](https://doi.org/10.2016/j.jvolgeores.2016.04.013)), 2016

Parker, A. L., J. Biggs, R. J. Walters et al., Systematic arc-scale assessment of atmospheric uncertainties in InSAR data using large-scale atmospheric models: application to the Cascades, *Remote Sensing of Environment*, (doi:[10.1016/j.rse.2015.09.003](https://doi.org/10.1016/j.rse.2015.09.003)), 2015

Parker, A. L., J. Biggs, and Z. Lu, Investigating long-term subsidence at Medicine Lake Volcano, CA, using multitemporal InSAR. *Geophysical Journal International*, (doi:[10.1093/gji/ggu304](https://doi.org/10.1093/gji/ggu304)), 2014

Parker, A. L., J. Biggs, C. Annen, Time constraints on magma intrusion from thermal models of long-term subsidence: Medicine Lake Volcano, CA, in prep
Turner, B., J. Jenkins, R. Turner, **A.L. Parker**, et al., Seismicity of the Earth 1900–2010 Himalaya and vicinity, *U.S. Geological Survey Open-File Report 2010-1083-J*, 2013

J. Jenkins, B. Turner, R. Turner, G. P. Hayes, A. Sinclair, S. Davies, **A. L. Parker**, et al., Seismicity of the Earth 1900–2010 Middle East and vicinity, *U.S. Geological Survey Open-File Report 2010-1083-K*, 2013

Referees

Dr Juliet Biggs, (Academic Supervisor)	Prof. Zhong Lu, (USGS Collaborator)
University of Bristol, UK	Southern Methodist University, USA
Juliet.Biggs@bristol.ac.uk	zhonglu@smu.edu
+44117 331 5001	214 768 0101