

# FRANCES JACQUELINE COOPER

Postdoctoral Research Associate  
School of Earth and Space Exploration  
Arizona State University  
Tempe, Arizona 85281  
Tel: 480-965-5081  
Email: fcooper@usc.edu

## EDUCATION

- 2003–2008    **Ph.D.** in Geological Sciences  
University of Southern California (USC), Los Angeles, USA  
Advisor – Prof. John P. Platt  
Thesis: *Structural and thermobarometric constraints on the exhumation of the northern Snake Range metamorphic core complex, Nevada*
- 1999–2003    **M.Sci.** in Geology: 1st class (Hons), 2003, University College London (UCL), UK  
Advisor – Dr Ruth Siddall; Collaborator – Dr Gerald Roberts (Birkbeck College London)  
Thesis: *Wave-cut notches along the Perachora Peninsula: Evidence for short-term uplift in the Gulf of Corinth, Greece*

## ACADEMIC AWARDS AND HONORS

- 2008            USC Final Summer Dissertation Fellowship
- 2007–2008    USC Women in Science and Engineering (WiSE) Merit Fellowship
- 2007–2008    USC Dept. of Earth Sciences Graduate Student Fellowship
- 2006–2007    USC Hugo R. Santora Scholarship for International Students
- 2006            GSA Structural Geology and Tectonics Division Outstanding Student Research Award
- Spring 2006    USC Dept. of Earth Sciences Outstanding Teaching Assistant Award
- Fall 2005      USC Dept. of Earth Sciences Outstanding Teaching Assistant Award
- Spring 2005    USC Dept. of Earth Sciences Outstanding Teaching Assistant Award
- Fall 2004      USC Dept. of Earth Sciences Outstanding Teaching Assistant Award
- 2004            University of Southern California Keck Fellowship
- 2003            Natural Environment Research Council (NERC) fellowship for graduate study at UCL
- 2003            Highly commended by the UCL Dean of the Faculty of Mathematical and Physical Sciences
- 2003            UCL Dept. of Earth Sciences Morris Prize for merit
- 2002            UCL Dept. of Earth Sciences Morris Prize for merit
- 2001            UCL Dept. of Earth Sciences Hollingsworth Prize for work of good honors standard
- 2000            UCL Dept. of Earth Sciences Edith Goodyear Prize for the best work

## FUNDED GRANT PROPOSALS

- 2006            Geological Society of America Student Research Grant  
*(A thermobarometric investigation into the tilting history of the Northern Snake Range Décollement)* \$3400
- 2005            USC Department of Earth Sciences Graduate Student Research Fund Grant  
*(The rotational history of the Snake Range Detachment, Basin & Range Province)* \$2000

## TEACHING EXPERIENCE

### Courses taught:

Spring 2006	USC teaching assistant for GEOL321: Structural Geology & Tectonics
Fall 2005	USC teaching assistant for GEOL215a: Mineralogy
Spring 2005	USC teaching assistant for GEOL108: Crises of a Planet
Fall 2004	USC teaching assistant for GEOL108: Crises of a Planet
Spring 2004	UCL teaching assistant for C314: Advanced Structural Geology
Fall 2003	UCL teaching assistant for B178: Surface Processes

### Other educational activities:

2006–2007	Participant in the USC Center for Excellence in Teaching ‘Future Professoriate Program’
2002–2003	Creator of a web resource, ‘Geology in the landscape and buildings of London’, funded by the UCL Widening Participation initiative. Webpage: <a href="http://www.es.ucl.ac.uk/schools/Intro/londongeology.htm">http://www.es.ucl.ac.uk/schools/Intro/londongeology.htm</a>
1999	Volunteer teacher and environmental worker with Students Partnership Worldwide, Zimbabwe

## PROFESSIONAL ACTIVITIES AND AFFILIATIONS

### Responsibilities:

Spring 2007	USC Earth Sciences crustal dynamics seminar coordinator
2006–2007	USC Earth Sciences department seminar coordinator
2006–2007	USC Earth Sciences graduate student representative
2006–2007	Member of the USC College graduate student forum committee
2006	USC New Teaching Assistant Mentor
2006	Leader of the USC Dept. of Earth Sciences new graduate student field trip to the White Mountains and Owens Valley, eastern California
2000–2003	UCL Earth Sciences undergraduate student representative
2001–2002	UCL Earth Sciences Greenough Society treasurer

### Affiliations:

2000–present	Geological Society of London
2002–present	American Geophysical Union
2003–present	Geological Society of America
2008–present	Mineralogical Society of America

## WORKSHOPS AND FIELD TRIPS ATTENDED

### Workshops:

2007	Integrated Solid Earth Sciences Summer School on Tectonic Exhumation, Colorado Springs, Colorado
	Secondary ionization mass spectrometry (SIMS) workshop, The W.M. Keck Foundation Center for Isotope Geochemistry, UCLA

**Field trips:**

- 2007 The Aegean islands of Tinos, Syros, Naxos and Ios, Greece  
 2006 Ruby Mountains granite field trip, Nevada, USA  
 2003 Betic Cordillera, southern Spain  
 2002 Troodos ophiolite complex, Cyprus, Greece  
 1999 Independent mapping, Cantabrian Mountains, northern Spain  
 2000 Assynt, NW Scotland, U.K.

### INVITED TALKS

**Tectonics seminars:**

- Spring 2008 University of California, Los Angeles, Department of Earth and Space Sciences  
 Georgia Institute of Technology, Department of Earth and Atmospheric Sciences
- Fall 2007 Arizona State University, School of Earth and Space Exploration  
 Université Joseph-Fourier, Department of Geosciences, Grenoble, France  
 Oxford University, Department of Earth Sciences, UK

### PUBLICATIONS

**Published:**

- Cooper, F. J.**, Roberts, G.P. and Underwood, C.J., 2007, A comparison of  $10^3$ – $10^5$  year uplift rates on the South Alkyonides Fault, central Greece: Holocene climate stability and the formation of coastal notches, *Geophysical Research Letters*, 34, L14310, doi:10.1029/2007GL030673.  
*(Selected as an AGU Journal Highlight)*
- Wood, I.G., Vočadlo, L., Dobson, D.P., Price, G.D., Fortes, A.D., **Cooper, F.J.**, Neale, J.W., Walker, A.M., Marshall, W.G., Tucker, M.G., Francis, D.J., Stone, H.J. and McCammon, C.A., 2008, Thermoelastic properties of magnesiowüstite,  $(\text{Mg}_{1-x}\text{Fe}_x)\text{O}$ : determination of the Anderson–Grüneisen parameter by time-of-flight neutron powder diffraction at simultaneous high pressures and temperatures, *Journal of Applied Crystallography*, 41, 886–896.

**Accepted:**

- Roberts, G.P., Houghton, S.L., Underwood, C., Papanikolaou, I., Cowie, P.A., van Calsteren, P., Wigley, T., **Cooper, F.J.** and McArthur, J.M., Localisation of Quaternary slip-rates in an active rift in  $10^5$  years: an example from central Greece constrained by  $^{234}\text{U}$ – $^{230}\text{Th}$  coral dates from uplifted paleoshorelines, *Journal of Geophysical Research*.

**In review:**

- Cooper, F.J.**, Platt, J.P., and Platzman, E.S., Opposing shear senses in a sub-detachment mylonite zone: implications for core complex mechanics, *Tectonics*.

***In preparation:***

- Cooper, F.J.**, Platt, J.P., Anczkiewicz, R., and Whitehouse, M.J., Footwall dip of a core complex detachment fault: thermobarometric constraints from the northern Snake Range (Basin and Range, USA).
- Cooper, F.J.** and Platt, J.P., The role of detachment faulting in continental extension: new insights from the northern Snake Range metamorphic core complex, Nevada.
- Platt, J.P., **Cooper, F.J.**, Anczkiewicz, R., and Morgan, V.L., Rate of early Franciscan subduction from thermal modeling of the P-T-time histories of garnet-bearing tectonic blocks.

**Conference abstracts (\*= invited):**

- Cooper, F.J.**, Platt, J.P., Anczkiewicz, R., and Morgan, V.L., 2008, Constraints on early Franciscan subduction rates from 2-D thermal modeling, *to be presented at the AGU Fall Meeting in San Francisco*.
- \***Cooper, F.J.**, Platt, J.P., 2008, Shallow Initial Dip for the northern Snake Range Footwall: Constraints from Geothermobarometry, Geological Society of America Abstracts with Programs, Vol. 40, No. 6, p. 109.
- Roberts, G.P., Houghton, S. L., Underwood, C., Papanikolaou, I., Cowie, P. A., van Calsteren, P., Wigley, T., **Cooper, F.J.**, McArthur, J. M., 2008, Localisation of Quaternary Slip-Rates In An Active Rift In 100,000 Years Constrained by  $^{234}\text{U}$ - $^{230}\text{Th}$  Coral Dates from Uplifted Palaeoshorelines, Central Greece: Reconciling Geologic and Geodetic Deformation Rates, Geological Society of America Abstracts with Programs, Vol. 40, No. 6, p. 291.
- Cooper, F.J.**, Platt, J.P., 2008, Thermobarometric constraints on the tectonic evolution of the northern Snake Range metamorphic core complex, eastern Nevada, GSA Abstracts with Programs Vol. 40, No. 1.
- Cooper, F.J.**, Platt, J.P., and Platzman, E.S., 2007, Opposing shear senses in a sub-detachment mylonite zone: implications for the mechanism of continental extension, GSA Penrose conference on Extending a Continent: Architecture, Rheological Coupling, and Heat Budget, Naxos, Greece.
- Cooper, F.J.**, Platt, J.P., and Platzman, E.S., 2007, Two-phase shear within a core complex mylonite zone: the Northern Snake Range Décollement, Nevada, Geological Society Bicentennial Conference: Earth Sciences in the Service of Society, London, U.K.
- Cooper, F.J.**, Platt, J.P., and Platzman, E.S., 2006, Rotation of Syn-Kinematic Dikes in the Northern Snake Range Décollement Mylonite Zone, Eos Transactions, American Geophysical Union, 87(52), Fall Meeting Supplement, Abstract T13B-0448.
- Cooper, F.J.**, and Platt, J.P., 2005, Tilting History of the Northern Snake Range Décollement from Footwall Geothermobarometry, Eos Transactions, American Geophysical Union, 86(52), Fall Meeting Supplement, Abstract T13C-0488.
- Cooper, F.J.**, and Platt, J.P., 2005, Origin of W-directed shear zones in the Northern Snake Range Décollement, GSA Abstracts with Programs Vol. 37, No. 7.