

Thomas Edward Lawrence Smith

PhD, MSc, FRGS, FHEA

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Employment

January 2018 – Present	Assistant Professorial Lecturer in Environmental Geography, Department of Geography and Environment, London School of Economics and Political Science
April 2013 – December 2017	Lecturer in Physical & Environmental Geography, Department of Geography, King's College London
Feb 2012 – April 2013	Research Associate, Department of Geography, KCL NERC Knowledge Exchange Project: Enhancing understanding of wildfire behaviour and suppression within the UK Fire and Rescue Service: NERC Knowledge Exchange Grant NERC SAMBBA (South American Biomass Burning Analysis): NERC Responsive Mode Consortium Grant.

Education

PhD 2008 – 2012	King's College London PhD in Physical Geography <i>Funded by a full NERC-ESRC Studentship</i> <i>Evaluation and Application of FTIR spectroscopy for the field study of biomass burning emissions</i>	London
PGCAPHE 2013 – 2014	King's College London Postgraduate Certificate in Academic Practice <i>Pass with Distinction</i>	London
MSc 2007 – 2008	King's College London MSc Environmental Monitoring, Modelling and Management <i>Funded by a full NERC studentship</i> <i>Pass with Distinction</i> Peter Balchin Prize – 'for the best dissertation by a masters physical geography student' (2008). <i>Dissertation: Towards a field method for retrieving urban surface emissivity</i> <i>Environmental Remote Sensing; Modelling Environmental Change; Monitoring Environmental Change; Environmental GIS; Methods for Environmental Research; Environmental Research Design and Application</i>	London
BSc 2003 – 2006	The University of Sheffield BSc (Hons) Geography – First Class Hart Prize – 'for the best overall performance in the extended essay by a single honours geography student' (2006).	Sheffield

Teaching Experience

Jan 2018 – Present	Assistant Professorial Lecturer, Department of Geography and Environment, LSE <ul style="list-style-type: none">• GY120 Environmental Change, Past, Present and Future• GY220 Environment: Science and Society• GY240 Research Techniques• GY499 Dissertation (tutor)
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Sep 2013 –
Dec 2017

Lecturer, Department of Geography, KCL

- 4SSG0140 The Changing Natural Environment (25% of 30-credit module)
- 4SSG1008 Geography Tutorials: Critical Thinking and Techniques (module co-ordinator of 30-credit module)
- Additional level 4 undergraduate field and lab co-curricular teaching (not attached to any module)
- 5SSG2043 Environmental Remote Sensing (module co-ordinator and 70% teaching of 15-credit module)
- 5SSG2049 Methods in Physical Geography (30% teaching of 15-credit module)
- 5SSG2051 Climatic Variability, Change and Society (20% teaching of 15-credit module)
- 5SSG2057 Landscapes: Biogeography, Ecology and Management (50% teaching of 15-credit module)
- 6SSG3061 Current Research in Geography (two-weeks teaching on 15-credit module)
- 6SSG0610 Independent Geographical Study (supervision of five students)
- 6SSG3070/7SSG5176 Global Environmental Change 1: Climate Science (30% teaching of 15-credit module)
- 6SSG3071/7SSG5177 Global Environmental Change 2: Earth System Dynamics (module co-ordinator and 75% teaching of 15-credit module)
- 7SSG5005 Masters Dissertation (supervision of two students)
- NERC Doctoral Training Partnership

Oct 2011 –
Dec 2017

Class Teacher, Department of Geography and Environment, LSE

GY120: Environmental Change, Past, Present and Future

Module convenor: Prof David Jones

- 20 week course, 3 × 1 hour classes each week, 22–36 first-year undergraduates (8–15 in each class), 8 weeks since 2013/14.
- Setting and marking exam questions and coursework.

Awarded two **Teaching Excellence Prizes** (student feedback and staff evaluation)

Prizes

2018/19	LSESU Student-led Teaching Excellence Award: Highly Commended for Research Guidance and Support.
2017/18	Excellence in Education Award, LSE
2015/16	Nominated for Teaching Excellence Awards, King's College London
2014/15	Nominated for Teaching Excellence Awards, King's College London
2013/14	Nominated for Teaching Excellence Awards, King's College London
2012/13	Teaching Excellence Prize, LSE
2011/12	Teaching Excellence Prize, LSE
2011	Institute of Physics Environmental Physics Group essay competition: <i>Winner</i>
2008	Peter Balchin Prize, Department of Geography, King's College London <i>'for the best dissertation by a masters physical geography student'</i>
2006	Hart Prize, Department of Geography, University of Sheffield <i>'for the best overall performance in the extended essay by a single honours geography student'</i>

PhD Supervision

2016 – Present	Alejandro Coca Castro (PhD, funded by Funcación CEIBA Loan-Schoalrship Programme) Modelling pan-tropical land cover and land-use trajectories of deforested areas.
2014 – 2018	Jake Simpson (PhD, funded by a NERC CASE studentship) Quantifying greenhouse gas emissions from biomass burning in an Indonesian tropical peat swamp forest REDD+ project area.

Research Interests

- Biomass burning emissions from tropical peatlands, Australian savanna, and British moorlands.
- Open-path and solar occultation FTIR field spectroscopy.

- The use of unmanned aerial vehicles (UAVs) for the monitoring of land management fires/wildfires.
- Low-cost sensor solutions for air quality and micrometeorology.

Education Funding

Principal Investigator (>£100,000, £89,882 since joining LSE)

2019	LSE Eden Fund: Undergraduate Research Fellowships: £50,525
2019	LSE Student Experience Enhancement Fund: LSE Careers visit to Urban Orchard: £300
2018	LSE TLC Ignite Grant: Urban climate and air quality at the LSE: data visualisation and assurance for environmental geographers: £8,848
2018	LSE Annual Fund: LSE Geography and Environment Student Research Fellowships: £17,036 [co-PI with Richard Perkins]
2017	LSE Student Experience Enhancement Fund: GY120 Juniper Hall Practical Fieldtrip: £3,788
2017	LSE Pro-Director Education Vision Fund: Making Student Makers: An integrated approach to experiential learning in environmental geography: £10,210
2017	FreeStation Handheld: Developing a low-cost compact weather station using Arduino open-source hardware and 3D-printing: King's College London Undergraduate Research Fellowship: £2,150
2016	K-Link Widening Participation Activity Programme: King's College London Department of Widening Participation Grants Scheme: £1,800
2016	Using new wildfire spread modelling tools to assess wildfire risk in Northumberland: King's College London Undergraduate Research Fellowship: £2,360
2015	K-Link Widening Participation Activity Programme: King's College London Department of Widening Participation Grants Scheme: £3,000
2015	Open source hardware for Geography and beyond: King's College London Faculty of Social Science and Public Policy Faculty Education Fund: £4,900
2015	SeNSoRRR: Sensor Networks for Soil and River Risk Resilience: King's College London Undergraduate Research Fellowship: £2,794

Co-Investigator

2016	NERC Doctoral Training Programme 'added value activities in innovation' Grant: £150,446 (£24,490 to King's).
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Research Grants, Fellowships and Awards

Principal Investigator (>£400,000)

2019	How do tropical peatland greenhouse gas emissions respond in the immediate aftermath of a fire? Royal Geographical Society Environment and Sustainability Grant: £15,000
2017	National University of Singapore Faculty of Arts & Social Sciences Isaac Manasseh Meyer Visiting Fellowship: £3,500
2016	King's Worldwide Partnership Fund (to work with collaborators at Monash University Malaysia and National University of Singapore): £1,468
2015	Land degradation and tropical peatland fires: Evaluation of biogeochemical and physical factors affecting gaseous and particulate emissions: King's College London Department of Geography Department Research Innovation Fund: £1,196
2014	Improved assessment of emissions from peat swamp fires: new emission factors for REDD+ projects in tropical peatlands: Royal Geographical Society Small Grant: £3,000
2014	FIREfficient: Operational tools for improving efficiency in wildfire risk reduction in EU landscapes: European Commission Civil Protection Financial Instrument (Preparedness and Prevention Projects): £374,900 (£68,890 to King's)
2014	How does ecosystem functioning in tropical peatlands influence potential fire emissions?: King's College London Department of Geography Department Research Innovation Fund: £1,730
2013	Supporting UK Fire & Rescue Service Wildfire Training in Catalonia: King's College London Department of Geography Research and Impact Support Fund: £1,000
2010	King's College London Department of Geography Small Grants Fund: £250
2008	NERC/ESRC PhD studentship: £66,000
2007	NERC MSc studentship: £16,000

Co-Principal Investigator (>£250,000)

- Jun 2014 Measuring biomass burning emission factors for southeast Asian peat swamp fires: NERC Field Spectroscopy Facility equipment loans: **£51,650**
- Jun 2010 Improving trace gas emissions estimation for tropical biomass burning events: NERC Field Spectroscopy Facility equipment loans: **£51,650**
- Feb 2010 Linking trace gas emissions measurements with coincidental measurements of aerosol optical depth: NERC Field Spectroscopy Facility emergency equipment loans: **£18,100**
- Nov 2009 Monitoring vehicle pollution emissions and pollution transport in a city using FTIR: NERC Field Spectroscopy Facility equipment loans: **£51,650**
- Jun 2009 Monitoring vehicle pollution emissions and pollution transport in a city using FTIR: NERC Field Spectroscopy Facility equipment loans: **£51,650**
- Nov 2008 Assessing the use of FTIR for urban air pollution and vehicle emission studies: NERC Field Spectroscopy Facility equipment loans: **£51,650**

Co-Investigator (>£750,000)

- 2019 European Cooperation in Science & Technology (COST) Action Network 18135 – Fire in the Earth System: Science & Society: **€780,000** (4 years).
- 2015 NERC Urgency Grant: 'Key in situ measures of El Niño exacerbated fires in Indonesia: **£54,649**

Researcher Co-Investigator (named scientist, >£450,000)

- 2014 NERC CASE PhD studentship (co-supervisor and contributor to proposal): **£66,000**
- 2012 South American Biomass Burning Analysis (SAMBBA): NERC Consortium: **£303,123** to KCL
- 2011 Enhancing understanding of wildfire behaviour and suppression within the UK Fire and Rescue Service: NERC Knowledge Exchange Grant: **£98,216**

Travel Support

- Apr 2018 Accommodation and car hire for Brunei fieldwork. Funded by National University of Singapore.
- Sep 2016 Return flights to Jakarta for British Council workshop on 'Tropical forest biodiversity and carbon storage: developing a roadmap for a long-term forest monitoring network in Indonesia'. Funded by the British Council.
- Dec 2014 Return train travel and accommodation for laboratory measurements at CEH Edinburgh. Funded by CEH.
- Apr 2013 Flights to Sydney and Kuala Lumpur for visits to University of Wollongong and Monash University (Kuala Lumpur campus). Funded by KCL Department of Geography.
- Apr 2013 Return flights to Bandar Seri Begawan for ASEM conference and iCUBE committee meeting. Funded by the British High Commission in Brunei.
- Jan 2012 Return flights to Bandar Seri Begawan for iCUBE workshop. Funded by KCL SSPP.
- Sep 2009 Return flights to Darwin for fire emissions field work. Funded by Tropical Spatial Sciences, School of Environmental and Life Sciences, Charles Darwin University, Darwin, Australia
- Jul 2009 Return flights to Darwin for fire emissions field work. Funded by Tropical Spatial Sciences, School of Environmental and Life Sciences, Charles Darwin University, Darwin, Australia

Publications: Journal Articles

Under review

- Si, E.L.Y., Chadwick, M.A., **Smith, T.E.L.**, Sukri, R.S.H. (under review) Carbon dioxide flux from peat swamp soils in northern Borneo. *Geoderma Regional*.
- Hu, Y., Christensen, E.G., Amin, H.M.F., Smith, T.E.L., Rein, G. (under review) Experimental study of moisture content effects on the transient gas and particle emissions from peat fires. *Combustion and Flame*.
- Saunders, B., **Smith, T.E.L.** (under review) Spatial variability of particulate aerosol pollution on the London Underground. *Urban Climate*.

2019

- Bernhard, K., **Smith, T.E.L.**, Sabuhoro, E., Nyandwi, E., Munanura, I.E. (2019) Effects of integrated conservation-development projects on unauthorized resource use in Rwanda's volcanoes national park: a mixed-methods spatiotemporal approach. *Oryx* [paper accepted].
- Brearely, F.Q., Adinugroho, W.C., Cámara-Leret, R., Krisnawati, H., Ledo, A., Qie, L., **Smith, T.E.L.**, Aini, F., Garnier, F., Lestari, N.S. and Mansur, M., (2019) Opportunities and challenges for an Indonesian forest monitoring network. *Annals of Forest Science*, **76**(2), p.54.
- Padfield, R., Hansen, S., Davies, Z.G., Ehrensperger, A., Slade, E., Evers, S., Papargyropoulou, E., Bessou, C., Abdullah, N., Page, S. and Ancrenaz, M. ... **Smith, T.E.L.**, et al. (2019) Co-producing a research agenda for sustainable palm oil. *Frontiers in Forests and Global Change*, **2**, p.13.

2018

- Smith, T.E.L.**, Evers, S., Yule, C.M., Gan, J.Y. (2018) *In situ* tropical peatland fire emission factors and their variability, as determined by field measurements in Peninsula Malaysia. *Global Biogeochemical Cycles* doi:10.1002/2017gb005709.
- Veerawamy, A., Galea, E.R., Filippidis, L., Lawrence, P.J., Haasanen, S., Gazzard, R.J., **Smith, T.E.L.** (2018) The simulation of urban-scale evacuation scenarios with application to the Swinley Forest Fire. *Safety Science* **102**: 178–193
- Hu, Y., Fernandex-Anez, N., **Smith, T.E.L.**, Rein, G (2018) Review of emissions from smouldering peat fires and their contribution to regional haze episodes. *International Journal of Wildland Fire*.
Doi:10.1071/WF17084
- Roulston, C., Paton-Walsh, C., **Smith, T.E.L.**, Guérette, E.-A., Evers, S., Yule, C.M., Rein, G., van der Werf, G. (2018) Fine particle emissions from tropical peat fires decrease rapidly with time since ignition. *Journal of Geophysical Research - Atmospheres*. Doi:10.1029/2017JD027827
- Guérette, E.-A., Paton-Walsh, C., Desservettaz, M., **Smith, T.E.L.**, Volkova, L., Weston, C.J., Meyer, C.P. (2018) Emissions of trace gases from Australian temperate forest fires: emission factors and dependence on modified combustion efficiency. *Atmospheric Chemistry and Physics* **18**: 3717–3735
<https://doi.org/10.5194/acp-2017-883>

2017

- Simpson, J.E., **Smith, T.E.L.**, Wooster, M.J. (2017) Assessment of errors caused by forest vegetation structure in airborne LiDAR-derived DTMs. *Remote Sensing* **9**(1), 1101; doi:10.3390/rs9111101
- Wijedasa, L.S., Jauhainen, J., Könönen, M., Lampela, M., Vasander, H., LeBlanc, M.C., Evers, S., **Smith, T.E.L.**, Yule, C.M., Varkkey, H. and Lupascu, M. *et al.* (2017) Denial of long-term issues with agriculture on tropical peatlands will have devastating consequences. *Global Change Biology* **23**(3): 977–982.

2016

- Simpson, J.E., Wooster, M.J., **Smith, T.E.L.**, Trivedi, M., Vernimmen, R.R.E., Dedi, R., Shakti, M., Dinata, Y. (2016) Tropical peatland burn depth and combustion heterogeneity assessed using UAV Photogrammetry and airborne LiDAR during the 2015 El Niño. *Remote Sensing* **8**(12): 1000; doi:10.3390/rs812000

2015

- Wilson, D., Dixon, S.D., Artz, R.R.E., **Smith, T.E.L.**, et al. (2015) Derivation of greenhouse gas emission factors for peatlands managed for extraction in the Republic of Ireland and the UK. *Biogeosciences* **12**: 5291–5308.

2014

- Smith, T.E.L.**, Paton-Walsh, C., et al. (2014) New emission factors for Australian vegetation fires measured using open-path Fourier transform infrared spectroscopy. Part 2: Australian tropical savannas. *Atmospheric Chemistry and Physics* **14**, 5, 6311–6360
- Paton-Walsh, C., **Smith, T.E.L.**, et al. (2014) New emission factors for Australian vegetation fires measured using open-path Fourier transform infrared spectroscopy. Part 1: Methods and Australian temperate forests *Atmospheric Chemistry and Physics* **14**, 4, 4327–4381
- Kotthaus, S., **Smith, T.E.L.**, Wooster, M.J., and Grimmond, C.S.B. (2014) Application of field spectroscopy to characterise short- and long-wave radiative response of impervious urban materials. *ISPRS Journal of Photogrammetry and Remote Sensing* doi: 10.1016/j.isprsjprs.2014.05.005

2012

Meyer, C.P., Cook, G.D., Reisen, F., **Smith, T.E.L.**, Tattaris, M., Russell-Smith, J., Maier, S.W., Yates, C.P., and Wooster, M.J. Direct measurements of the seasonality of emission factors from savanna fires in northern Australia. Submitted to *Journal of Geophysical Research*.

2011

Wooster, M.J., Freeborn, P.H., Archibald, S., Oppenheimer, C., Roberts, G.J., **Smith, T.E.L.**, Govender, N., Burton, M., and Palumbo, I. Field determination of biomass burning emission ratios and factors via open-path FTIR spectroscopy and fire radiative power assessment: headfire, backfire and residual smouldering combustion in African savannahs, *Atmospheric Chemistry and Physics* 11(22): 11591-11615, 2011.

Loridan, T., Grimmond, C. S. B., Offerle, B. D., Young, D.T., **Smith, T. E. L.**, and Järvi, L. Local-scale Urban Parameterization Scheme (LUMPS): Longwave radiation parameterization and seasonality related developments, *Journal of Applied Meteorology and Climatology* 50(1): 185-202, 2011.

Smith, T.E.L., Wooster, M.J., Tattaris, M., and Griffith, D.W.T., Absolute accuracy and sensitivity analysis of OP-FTIR retrievals of CO₂, CH₄ and CO over concentrations representative of “clean air” and “polluted plumes”, *Atmospheric Measurement Techniques* 4: 97-116, 2011.

2010

von Bobruzki, K., Braban, C. F., Famulari, D., Jones, S. K., Blackall, T., **Smith, T. E. L.**, Blom, M., Coe, H., Gallagher, M., Ghalaieny, M., McGillen, M. R., Percival, C. J., Whitehead, J. D., Ellis, R., Murphy, J., Mohacsi, A., Pogany, A., Junninen, H., Rantanen, S., Sutton, M. A., and Nemitz, E.: Field inter-comparison of eleven atmospheric ammonia measurement techniques, *Atmospheric Measurement Techniques* 3: 91-112, 2010.

Publications: Book Chapters

2016

Wooster, M.J., **Smith, T.E.L.**, Drake, N.A. (2016) Remote Sensing and Satellite Earth Observation. In Clifford et al., *Key Methods in Geography*, Sage, London.

2013

Hecker, C., **Smith, T.E.L.**, Ribeiro da Luz, B., Wooster, M.J. TIR Spectroscopy in the laboratory and field in support of land surface remote sensing. In: Kuenzer, C. (Ed.) *Thermal Infrared*. Springer, New York.

Conference Proceedings, Research Reports, Unrefereed Papers

2019

Hu, Y., Santoso, M.A., **Smith, T.E.L.**, Nugroho, Y.S., Rein, G. (2019) Field and laboratory studies of haze emissions from peat fires. *The 16th International Congress on Combustion By-Products and Their Health Effects: July 10-12, 2019. University of Michigan, Ann Arbor, MI, USA.*

Lupascu, M., Akhtar, H., **Smith, T.E.L.**, Sukri, R.S. (2019) Post-fire fluxes and sources of carbon in tropical peatlands, Brunei. *EGU General Assembly 2019 EGU2019-6674.*

Akhtar, H., **Smith, T.E.L.**, Lupascu, M., Sukri, R.S. (2019) Effects of post-fire vegetation structure on CH₄ emissions from a degraded tropical peatland in Brunei. *EGU General Assembly 2019 EGU2019-12694.*

2017

Coca Castro, A., Reymondin, L., Rebetez, J., Mejia, H.F.S., Perez-Urbe, A., Mulligan, M., **Smith, T.E.L.**, Hyman, G. Big earth-observation data analytics for modelling pan-tropicalland-use change trajectories for newly deforested areas. *Geophysical Research Abstracts* 19: EGU2017-1195-2.

Lupascu, M., Akhtar, H., **Smith, T.E.L.**, Sukmaria, R. Post-fire fluxes and sources of carbon in previously burnt tropical swamp peatlands, Brunei. *AGU Fall Meeting Abstracts, 2017.*

2016

- Smith, T.E.L.**, Yule, C.M., Evers, S., Paton-Walsh, C., Gan, J.Y. First *in situ* measurements of tropical peatland fire emissions: new emission factors for greenhouse gas reporting and haze forecasting. *Proceedings of the 15th International Peat Congress, 15–19 August 2016, Kuching, Malaysia.*
- Simpson, J.E., Smith, T.E.L., Trivedi, M., Wooster, M.J. Demonstration of a cost-effective UAV system to measure depth of burn for emissions estimates from peat fires in Indonesia. *Proceedings of the 15th International Peat Congress, 15–19 August 2016, Kuching, Malaysia.*
- Yule, C.M., Evers, S., **Smith, T.E.L.**, Gan, H.M., Too, C.C., Eng, W.W.H. Impact of fire on microbial diversity and community structure in Malaysian peatlands. *Proceedings of the 15th International Peat Congress, 15–19 August 2016, Kuching, Malaysia.*
- Page, S.E., Hooijer, A., Vernimmen, R., Miettinen, J.I., Rosse, M., Gaveau, D., **Smith, T.E.L.** The ring of fire: Tackling Indonesia's Peatland Dynamic [**Keynote paper**] *Proceedings of the 15th International Peat Congress, 15–19 August 2016, Kuching, Malaysia.*

2011

- Smith, T.E.L.**, Allen, K., Marrs, R., Harris, M., Dold, J. and Wooster, M.J. Emissions of greenhouse gases and selected volatile organic compounds from UK moorland burning estimated using open-path FTIR spectrometry and burnt area measures. *Geophysical Research Abstracts* **13**, EGU2011-10782-1, 2011, EGU General Assembly 2011, 2011.

2010

- Smith, T.E.L.**, Wooster, M.J. and Tattaris, M. Open-Path FTIR spectroscopy of CO₂, CH₄ & CO: Experimental accuracy evaluation for ambient to highly polluted concentrations. *Proceedings of the remote sensing and photogrammetry society conference. Remote Sensing and the Carbon Cycle, Burlington House, London, 5th May 2010, 2010.*
- Tattaris, M., Wooster, M.J., **Smith, T.E.L.**, and Paugam, R. Quantifying gaseous emissions from tropical savanna fires in northern Australia using UV-DOAS and FTIR remote sensing. *Proceedings of the remote sensing and photogrammetry society conference. Remote Sensing and the Carbon Cycle, Burlington House, London, 5th May 2010, 2010.*
- Dold, J., Tsitsopoulos, V., Khan, I., Scott, K., McMorrow, J., Lowe, E., Danson, F.M., Ramirez, A., Doerr, S., Bryant, T., Harris, M., Tollitt, T., Allen, K., Paugam, R., Freeborn, P., **Smith, T.E.L.**, Davies, H., Wooster, M., Legg, C., Gibson, S., Elliott, A., Yearsley, S. Report on field experiments in Northumberland, March 2010. *Proceedings of the VI International Conference on Forest Fire Research, Viegas, D.X. (Ed.), 2010*
- Meyer, C.P., Cook, G., Reisen, F., Schatz, J., **Smith, T.E.L.**, Tattaris, M., Russell-Smith, J., Yates, C., Watt, F. Seasonality of burning emissions from savanna fires in southern Africa and northern Australia: evidence and implications for land management and greenhouse gas inventories. NAILSMA government report. CSIRO, 2010.

2009

- Smith, T.E.L.**, and Wooster, M.J. Emissivity Measurements with a Portable FTIR Spectrometer. *Exploration Remote Sensing - The 20th Annual Meeting of the Geological Remote Sensing Group (GRSG), 15-17 December 2009, The Geological Society of London, 2009.*
- Beevers, S., Grimmond, C.S.B., Klostermann, J., Kotthaus, S., **Smith, T.E.L.**, Young, D.T. *Sustainable Urban Planning in London: Communities of Practice meeting in London #1 – 24 August 2009, King's College London, 2009.*

Invited Presentations

2019

- Smith, T.E.L.** Chasing Fire. *Royal Geographical Society Singapore Branch, Singapore, 11 April 2019.*
- Smith, T.E.L.** Chasing Fire. *Royal Geographical Society Monday Night Lecture Series, London, 21 January 2019.*

2016

Smith, T.E.L. Smoke and mirrors: Why are tropical biomass burning emissions important? And how do we measure them? *National University of Singapore Department of Geography Research Seminar Series*, Singapore, 22 August 2016.

Smith, T.E.L. Top-down and bottom-up estimates of agricultural fire emissions from SE Asia, *International Center for Tropical Agriculture (CIAT)*, Hanoi, Vietnam, 13 June 2016.

Smith, T.E.L. Low-cost environmental science using Arduinos, *Field Technologies: Mapping & Monitoring Party*, Royal Geographical Society, 18 March 2016.

2015

Smith, T.E.L. Smoke and Mirrors: Why biomass burning emissions are important and how to measure them, *Centre for Atmospheric Chemistry Seminar Programme*, University of Cambridge, 23 March 2015.

Smith, T.E.L. Modelling the Swinley-Crowthorne Forest Fire, *Wildfire Research and its Impact on Policy, Planning and Operations: The Swinley Forest Fire*, Greenwich, 20 April 2015

2014

Smith, T.E.L., Hewitt, C., Aerial sensing and simulation modelling for enhancing preparedness and prevention in Northern European landscapes *The Sill Project Wildfire 2014 Conference*, Northumberland, 22nd–23rd October 2014.

Smith, T.E.L., Kotthaus, S., Bushfires, bogs, and brickwork: Recent work with FTIR spectroscopy at KCL. *NERC FSF biennial workshop at the Remote Sensing and Photogrammetry Society Conference 2014*, Aberystwyth, 2 September 2014.

Smith, T.E.L., Quantifying Greenhouse Gas Emissions from Biomass Burning in an Indonesian Tropical Peat Swamp Forest REDD+ Project Area. *Research Centre for Climate Change Seminar Series*, Universiti Indonesia, 6 August 2014.

2013

Smith, T.E.L. Quantifying fire emissions: where bottom up meets top down, *University of Leicester, Department of Geography Seminar Series*, 27 November 2013.

Smith, T.E.L. Enhancing understanding of wildfire behaviour and suppression using Remote Sensing and Computer Simulation Modelling, *Wildfire 2013, Vale of Glamorgan*, 22-23 October 2013.

Smith, T.E.L. Quantifying fire emissions from space, *University of Wollongong, Department of Chemistry Seminar Series*, 29 May 2013.

Smith, T.E.L. Wildfire: recycled sunlight or fuel for climate change, *Asia-Europe Meeting (ASEM) on Climate Change and Biodiversity*, Universiti Brunei Darussalam, 14 May 2013.

2012

Smith, T.E.L. Smokey infrared pathways: FTIR spectroscopy for field study of biomass burning emissions, *International Consortium of Universities for the Study of Biodiversity and the Environment (iCUBE): Impact of Climate Change & Innovations for a Sustainable Future*, Universiti Brunei Darussalam, 12 January 2012.

Smith, T.E.L. Smokey infrared pathways: FTIR spectroscopy for field study of biomass burning emissions, *Department of Geography Seminar Programme*, Universiti Brunei Darussalam, 17 January 2012.

Smith, T.E.L. Smoke and Mirrors: Infrared spectroscopy and radiometry for the study of biomass burning emissions, *Atmospheric Physics Group Seminar Programme*, Imperial College London, 23 October 2012.

2011

Smith, T.E.L. Not just recycled sunlight: Biomass burning and its influence on global climate change, *Environmental Physics Day*, Institute of Physics, London, 25 May 2011.

Conference and Workshop Presentations

2015

Kotthaus, S., **Smith, T.E.L.**, Wooster, M.J., Grimmond, C.S.B., Derivation of an urban materials spectral library through emittance and reflectance spectroscopy. 9th International Conference on Urban Climate ICUC9, 24 July 2015.

2014

Smith, T.E.L., Hewitt, C., How can aerial sensing and computer simulation modelling enhance understanding of wildfire preparedness and prevention in northern European landscapes? *Royal Meteorological Society Wildfire Workshop 2014*, Met Office, Exeter, 3rd–4th December 2014.

Hewitt, C., **Smith, T.E.L.**, Assessing trade-offs between wildfire reduction strategies and stakeholder values in the Eastern Mourne Mountains. *Royal Meteorological Society Wildfire Workshop 2014*, Met Office, Exeter, 3rd–4th December 2014.

2011

Smith, T.E.L., Allen, K., Marrs, R., Harris, M., Dold, J. and Wooster, M.J. Emissions of greenhouse gases and selected volatile organic compounds from UK moorland burning estimated using open-path FTIR spectrometry and burnt area measures. *EGU General Assembly 2011*, 4 April 2011 (poster).

2010

Smith, T.E.L., Wooster, M.J., and Tattaris, M. Quantifying gaseous emissions from biomass burning using open-path-FTIR spectroscopy. *Molecular Spectroscopy Facility Users' Meeting*, Rutherford Appleton Laboratory, Hanwell, 24 November 2010.

Smith, T.E.L., Wooster, M.J., and Tattaris, M. Open-Path FTIR spectroscopy of CO₂, CH₄ & CO: Experimental accuracy evaluation for ambient to highly polluted concentrations. *Remote Sensing and the Carbon Cycle*, Remote Sensing and Photogrammetry Society, London, 5 May 2010 (poster).

Smith, T.E.L. Ground-based remote sensing of savanna fires: Arnhem Land, July & October 2009. *Science and technical programme workshop*, Northern Australia Indigenous Land and Sea Management Alliance (NAILSMA), Darwin, Australia, 21 October 2010.

Smith, T.E.L. Ground-based remote sensing of rural fires: Northumberland, March 2010. *FIREMAN workshop*, Peak District National Park, 20 July 2010.

Smith, T.E.L., Young, D.T., Loridan, T., Grimmond, C.S.B. QuiNimbus: Cloud Statistics for Urban Micrometeorology. *Adapting our cities for future climates*, Royal Meteorological Society, London, 17 February 2010 (poster).

Loridan, T., Grimmond, C.S.B., Offerle, B.D., Young, D.T., **Smith, T.E.L.**, Jarvi, L., and Horn, J. LUMPS NARP an urban land surface scheme: evaluation and development of a new longwave parameterization. *Adapting our cities for future climates*, Royal Meteorological Society, London, 17 February 2010 (poster).

Tattaris, M., Wooster, M.J., **Smith, T.E.L.**, and Paugam, R. Quantifying gaseous emissions from tropical savanna fires in northern Australia using UV-DOAS and FTIR remote sensing. *Remote Sensing and the Carbon Cycle*, Remote Sensing and Photogrammetry Society, London, 5 May 2010 (poster).

2009

Smith, T.E.L., and Wooster, M.J. Emissivity Measurements with a Portable FTIR Spectrometer. *Exploration Remote Sensing - The 20th Annual Meeting of the Geological Remote Sensing Group (GRSG)*, The Geological Society of London, 17 December 2009.

Service and Outreach

Academic Service

2019 – Present	LSE Department of Geography & Environment Departmental Tutor
2018 – Present	LSE BSc Environmental Policy with Economics Programme Director
2018 – Present	LSE BSc Environment and Development Programme Director
2018 – Present	LSE Department of Geography & Environment Teaching Committee
2017	KCL Department of Geography Internationalisation Lead
2016 – 2017	KCL Department of Geography Postgraduate Research Deputy-Chair
2016 – 2017	KCL MSc Programme Director: <i>MSc Climate Change: Environment, Science & Policy</i>
2015 – 2017	KCL Department of Geography Marketing and Communications Committee Member
2015 – 2017	KCL SSPP Faculty Outreach Champion

2013 – 2015	International Consortium of Universities for the Study of Biodiversity and the Environment (iCUBE) Research Committee Member
2013 – 2017	KCL Department of Geography Departmental Outreach Officer
2013 – 2015	KCL Department of Geography Research Committee Member
2012 – 2013	KCL Department of Geography Research Committee Postgraduate Representative
2009 – 2011	Principle co-ordinator of the Environmental Monitoring and Modelling Group seminar programme
2008 – 2009	KCL Department of Geography staff-student committee (EMM group PhD representative)
2007 – 2008	KCL Department of Geography staff-student committee (MSc EMMM representative)

Community and Public

2019 – Present	Early-Career Researcher Officer for COST Action 18135 Fire in the Earth System: Science & Society [CORE group].
2019 – Present	UK representative to the Management Committee of COST Action 18135 Fire in the Earth System: Science & Society.
May 2018	<i>Pint of Science 2018</i> talk on 'The hazy shad of palm oil'
May 2017	<i>Pint of Science 2017</i> talk on 'Low-cost environmental sensing'
May 2016	<i>Pint of Science 2016</i> talk on 'They breathe what we buy'
Apr 2016	Instructor on <i>Geo-technology in the Field: GIS, GPS, and remote sensing for fieldwork Workshop</i> , Royal Geographical Society, 25–26 April 2016.
Sep 2015	Television interview for TRT World <i>The Newsmakers</i> (Palm Oil and Haze in SE Asia)
Aug 2014–16	Instructor on <i>Sutton Trust Summer School</i> , Department of Geography, KCL.
May 2014	<i>Pint of Science 2014</i> talk on 'Wildfire: recycled sunlight or fuel for climate change?'
May 2014	<i>Fighting Fire with Fire</i> photo essay published in <i>Documentary Photo Review</i>
Jul 2011	Fieldwork in Dorset featured on CBBC Newsround (including thermal infrared footage from KCL's camera), features were also included on ITN and BBC local news.
Dec 2010	Letter featured in the <i>New Scientist</i> book (p.182) 'Why Can't Elephants Jump?: and 113 more science questions answered': 'Apple Melt'.
Oct 2009	Fieldwork featured on ABC Television programme <i>Catalyst: 'In the line of fire'</i> , broadcasted on 29 October 2009.
Sep 2009	Fieldwork featured on ABC News television programme <i>Landline: 'Fighting fire with fire'</i> , broadcasted on 28 September 2009.
Aug 2009	Letter featured in <i>New Scientist</i> 8 August 2009 (p.65): 'The last word: Apple melt'.
Jul 2009	Radio interview for ABC Radio <i>Country Hour: 'Ghostbusting in Arnhem Land'</i> , broadcasted on 20 July 2009.
Jul 2009	Presentation to explain the purpose of fire fieldwork to village elders and West Arnhem Land Fire Abatement stake holders, 31 July 2009.

Journals

Regular reviewer for *Atmospheric Environment*, *Global Biogeochemical Cycles*, *Geophysical Research Letters*, *Remote Sensing*, *International Journal of Wildland Fire*, *Atmospheric Chemistry and Physics*, *Atmospheric Measurement Techniques*, and *Journal of Geophysical Research*.

Field and Laboratory Experience

Date	Location	Project
8/18	Indonesia	Gambut experimental burning project (with Imperial College)
6/17 – 4/18	Brunei	Permanent Sampling Plots for CO ₂ /CH ₄ flux measurements
1/17	Malaysia	Lab burning project
7/16 – 8/16	Malaysia	Field campaign to N Selangor to measure plantation/peat fires
7/15 – 8/15	Malaysia	Field campaign to SE Pahang to measure peatland fire smoke
10/14 – 4/15	Northumberland, UK	Aerial remote sensing of experimental heathland fires
12/14	Tranent, Edinburgh	White cell FTIR measurements for CEH biomass burning project
7/14	Brunei	Peat sampling for laboratory burning project
7/13	Brunei	Peat sampling for laboratory burning project
3/13	Catalonia, Spain	Tactical burn course, Institut de Seguretat Publica de Catalunya
7/11	Dorset, UK	UK Rural Fire Research Project (UKFRP) experimental fires
5/11	NERC MSF	Solar occultation FTIR accuracy assessment (lab work)

3/11	Northumberland, UK	UK Rural Fire Research Project (UKFRP) experimental fires
7/11 – 10/11	Darwin, Australia	Late dry-season wildfire measurements (PhD fieldwork)
5/10	London, UK	Ground truth spectroscopy for airborne remote sensing imagery
3/10	Norhumberland, UK	UK Rural Fire Research Project (UKFRP) experimental fires
9/09 – 10/09	Arnhem Land, Australia	West Arnhem Land Fire Abatement (WALFA) late dry season fires
6/09 – 7/09	Arnhem Land, Australia	WALFA early dry season fires
6/09	NERC MSF	Open-path FTIR accuracy assessment (lab work)
6/09	Alberta, Canada	Parks Canada Sustainable Resource Development (SRD) prescribed fires
10/08 – Present	King's College London	Urban micrometeorology measurements (UMET@KCL)
5/08 – 9/08	King's College London	Field and laboratory measurements of the emissivity of natural and human-made surfaces for MSc thesis

Consultancy

2012	Consulted for ForestRe Ltd. (insurance and reinsurance products for forestry and tree crops worldwide) producing a burnt area database for Chinese provinces.
2012	Consulted for the Natural Environment Research Council writing impact case study statements for various projects undertaken at the Department of Geography, King's College London.
2011	Consulted for the Department of Archaeology, University of Durham, measuring spectral emissivity at an archaeological site in Cirencester, UK.

Fellowships and Memberships

2015–Pres.	Member of the Tropical Catchment Research Initiative (Trocari)
2014–Pres.	Member of the UK Tropical Peat Working Group
2014–Pres.	Fellow of the Higher Education Authority (FHEA)
2013–Pres.	Fellow of the Royal Geographical Society (FRGS)
2011–Pres.	Member of the European Geosciences Union (EGU)

Other qualifications, achievements and interests

- ITC Certificate in Outdoor First Aid at SCQF Level 6 (valid until October 2020)
- ITC Certificate in Emergency First Aid at Work at SCQF Level 6 (valid until October 2020)
- Fire-fighting qualification: '*Tactical Use of Fire*' (Generalitat de Catalunya, Barcelona, 2013)
- Grade 8 with distinction in singing (ABRSM, London, 2004)
- Published amateur photographer
- Qualified football referee, level 7 (Football Association, 2002)
- Occasional winger for Leighton Buzzard's fourth XV rugby team
- Currently learning Bahasa Indonesia and Bahasa Melayu.
- Languages: English (mother tongue); French (basic); Spanish (basic)
- Full UK driving license