



Professor Martin J. Wooster

NERC National Centre for Earth Observation (NCEO) & King's College London
martin.wooster@kcl.ac.uk

Background

Divisional Director of the NERC National Centre for Earth Observation (NCEO) and lead of King's Wildfire Research Team focusing on quantifying biomass burning impacts on atmospheric composition, air quality and climate. Formerly at the Natural Resources Institute (then part of DfID [né ODA]). Developer of operational satellite EO products supporting real-time environmental monitoring, including the Copernicus Atmosphere Monitoring Service's Global Fire Assimilation System. Led multiple RCUK and internationally funded research, facility provision, capacity building and scientific training programmes and currently Co-Chair of the Fire Implementation Team of GOFC-GOLD (panel of the Global Terrestrial Observation System).

Awards

- 2014 **King's College London Supervisory Excellence Award**, King's College London.
- 2011 **Royal Geographical Society Cuthbert Peak Award** for 'advancing geographical knowledge of human impact on the environment through the application of contemporary methods'.
- 2009 **Italian President's WWF Award** for the team of EU FP6 project CARBOAFRICA - quantifying, understanding and predicting the carbon cycle and GHG fluxes in Sub-Saharan Africa.
- 2009 **KCL Innovation and Impact Award** in the King's College London Annual Awards.
- 2008 **NERC Environmental Science Knowledge Transfer Award** at the first London Knowledge Transfer Awards sponsored by the London Development Agency and Natural Environmental Research Council (and runners-up in the overall Knowledge Transfer Collaboration of 2008).
- 2007 **KCL Young Academic Researcher of the Year**, King's College London Annual Awards.
- 2001 **Daiwa-Adrian Award for Excellence in UK-Japan Science**, awarded in all science areas (1998-2000) and voted for by Fellows of the Royal Society and the British Council Tokyo.

Example research projects (over £5 million in awards as pi @ nceo/king's)

- 2016 – 2021 Pest Risk Information Service (UK Space Agency IPP, £8M with £650K to King's).
- 2016 - 2019 Integrating advanced Earth Observation and environmental information for sustainable management of crop pests and diseases (NEWTON-STFC, £1M with £148K to King's).
- 2015 - 2016 Earth Observation & Modelling Agri-Tech to Understand Chinese Burning in Relation to Management Practice & Climate Drivers (NEWTON-STFC, £375K with £85K to King's)
- 2015 - 2016 Key *in situ* measures of El Niño exacerbated fires in Indonesia (NERC, £48K)
- 2014 - 2017 The FIREsIdE International Collaboration (NERC, £263K)
- 2012-2017 Second Continuous Development and Operations Phase of a EUMETSAT Satellite Applications Facility on Land Surface Analysis (EUMETSAT, £5M with £324K to King's)
- 2011-2013 Enhancing wildfire training in the UK Fire and Rescue Service (NERC, £ 122K)
- 2012-2014 South American Biomass Burning Analysis -NERC Consortium Grant (NERC, £380K to King's)
- 2002-2005 Enhancing volcanic hazard avoidance capacity in Central America through local remote sensing and improved risk communication (DfID, £415K)

14 postdoctoral researchers supervised, and 11 PhD students supervised to successful completion.

Exemplar research publications (2014 - 2017) – total publications > 100

1. Bush, A., Sollmann, R., Wilting, A., Bohmann, K., Cole, B., Balzter, H., Martius, C., Zlinszky, A., Calvignac-Spencer, S., Cobbold, C.A., Dawson, T.P., Emerson, B.C., Ferrirer, S., Gilbert, M.T.P., Herold, M., Jones, L., Leendertz, F.H., Matthews, L., Millington, J.D.A., Olson, J.R., Ovaskainen, O., Raffaelli, D., Reeve, R., Rödel, M-O., Rodgers, T.W., Snape, S., Visseren-Hamakers, I., Vogler, A.P., White, P.C.L., **WOOSTER, M.J.**, Yu, D.W. (2017) Connecting Earth observation to high-throughput biodiversity data. ***Nature Ecol. & Evolution***, 1(7), p.176.
2. Simpson, J.E., **WOOSTER, M.J.** Smith, T.E., Trivedi, M., Vernimmen, R.R., Dedi, R., Shakti, M. and Dinata, Y., 2016. Tropical peatland burn depth and combustion heterogeneity assessed using UAV photogrammetry and airborne LiDAR. ***Remote Sens.***, 8(12), p.1000.
3. Xu, W., **WOOSTER, M.J.**, Kaneko, T., He, J., Zhang, T. and Fisher, D., 2017. Major advances in geostationary fire radiative power (FRP) retrieval over Asia and Australia stemming from use of Himarawi-8 AHI. ***Remote Sens. Environ.***, 193, pp.138-149.

4. Zhang, T., **WOOSTER, M.J.** and Xu, W., 2017. Approaches for synergistically exploiting VIIRS I-and M-Band data in regional active fire detection and FRP assessment: A demonstration with respect to agricultural residue burning in Eastern China. **Remote Sens. Environ.**, 198, pp.407-424.
5. Huijnen. V., **WOOSTER, M.J.** et al., (2016) Fire carbon emissions over maritime southeast Asia in 2015 largest since 1997. **Nature Sci. Reports**, 6, doi:10.1038/srep26886.
6. Parker, R.J., Boesch, H., **WOOSTER, M.J.**, Moore, D.P., Webb, A.J., Gaveau, D. and Murdiyarso, D. (2016) Atmospheric CH₄ and CO₂ enhancements and biomass burning emission ratios derived from satellite observations of 2015 Indonesian fires. **Atm. Chem. Phys.**, 16, pp.10111-10131.
7. De Jong, M. C., **WOOSTER, M.J.**, Kitchen, K., Manley, C., and Gazzard, R. (2016) Calibration and evaluation of the Canadian Forest Fire Weather Index (FWI) System for improved wildland fire danger rating in the UK, **Nat. Hazards Earth Syst. Sci.**, 16, pp.1217-1237.
8. Zhang, T., **WOOSTER, M.J.**, Green, D.C. and Main, B. (2015) New field-based agricultural biomass burning trace gas, PM_{2.5} and black carbon emission ratios and factors measured *in situ* at crop residue fires in eastern China. **Atmos. Environ.**, 121, 22-34.
9. Gaveau, D., Salim, M., Hergoualc'h, K., Locatelli, B., Sloan, S., **WOOSTER, M.J.**, Marlier, M, Molidena, E., Yaen, H., DeFries, R., Verchot, L., Murdiyarso, D., Nasi, R., Holmgren P. and Sheil, D. (2014) Major atmospheric emissions from peat fires in Southeast Asia during non-drought years: evidence from the 2013 Sumatran fires, **Nature Sci. Reports**, 4, doi:10.1038/srep06112.