Curriculum Vitae: Janet F. Barlow
August 2015

A Personal Information

Present appointment:
Professor of Environmental Physics, Department of Meteorology, University of Reading

Education and qualifications obtained:

2005	Postgraduate Certificate in Academic Practice (with Distinction)
1996-9	PhD on "Turbulent transfer of space charge in the atmospheric boundary layer", Department of Meteorology, University of Reading.
1994-5	MSc in Applied and Agricultural Meteorology (Distinction), University of Reading.
1990-4	BSc in Applied Physics and German (2i), UMIST.

Previous appointments:

2011-14	Director of the Centre for Technologies for Sustainable Built Environments (TBSE), University of Reading (0.5FTE)
2009-12	Reader in Urban Meteorology, University of Reading
2002-9	Lecturer, Department of Meteorology, University of Reading
1999-2	Post-doctoral Research Assistant, Department of Meteorology, University of Reading
Feb 1999	Research Assistant on a field experiment in Spain, Department of Meteorology, University of Reading
Jun-Sep 93	Laboratory Assistant, Max Planck Research Institute, Berlin

B Research and Scholarship

My research is largely concerned with urban meteorology and is motivated by the need to understand fundamental atmospheric processes acting at building and city scale in the effort to improve urban sustainability, including air quality. My work is largely experimental in nature, dividing into wind-tunnel based physical modelling, and urban observational campaigns. Other areas include application of boundary layer methods to study of insects in the boundary layer; energy meteorology.

1. Research Outputs
Contribution indicated by stars: * small (<33%) ** medium (33-66%) *** large contribution (>66%).

Publications submitted or in press:

51. Bradley, S., **Barlow, J.F.**, Lally, M.J. and Halios, C.H. (2014) A sodar for profiling in a spatially inhomogeneous urban environment, *submitted to Meteorologische Zeitschrift*

Publications:

50. Kubik, M.L., Coker, P.J. and **Barlow, J.F.** (2015) Increasing thermal plant flexibility in a high renewables power system, *Applied Energy*, 154, 102-111*
49. Drew, D.R., Cannon, D.J., Brayshaw, D.J., **Barlow, J.F.**, Coker, P.J. (2015) The impact of future offshore wind farms on wind power generation in Great Britain, *Resources*, 4(1), 155-171
48. **Barlow, J.F.** (2014) Progress in understanding and modelling the urban boundary layer, *Urban Climate*, 10, 216-240, DOI:10.1016/j.uclim.2014.03.011 ***
47. Bohnenstengel, SI, SE Belcher, A Aiken, JD Allan, G Allen, A Bacak, TJ Bannan, **JF Barlow**, DCS Beddows, WJ Bloss, AM Booth, C Chemel, O Coceal, CF Di Marco, MK Dubey, KH Faloon, ZL Fleming, M Furger, JK Gietl, RR Graves, DC Green, CSB Grimmond, CH Halios, JF Hamilton, RM Harrison, MR Heal, DE Heard, C Helfter, SC Herndon, RE Holmes, JR Hopkins, AM Jones, FJ Kelly, S Kotthaus, B Langford, JD Lee, RJ Leigh, AC Lewis, RT Lidster, FD Lopez-Hilfiker, JB McQuaid, C Mohr, PS Monks, E Nemitz, NL Ng, CJ Percival, ASH Prévôt, HMA Ricketts, R Sokhi, D Stone, JA Thornton, AH Tremper, AC Valach, S Visser, LK Whalley, LR Williams, L Xu, DE Young, P Zotter (2014) Meteorology, air quality, and health in London: The ClearfLo project, *Bulletin of the American Meteorological Society*, 96(5),779-804, DOI:10.1175/BAMS-D-12-00245.1 **
46. Drew, D.R., **Barlow, J.F.**, Cockerill, T.T., Vahdati, M.M. (2015) The importance of accurate wind resource assessment for evaluating the economic viability of small wind turbines, *Renewable Energy*, 77, 493-500 DOI:10.1016/j.renene.2014.12.032 **

45. **Barlow, J.F.**, Halios, C.H., Lane, S.E. and Wood, C.R. (2014) Observations of urban boundary layer structure during a strong urban heat island event, *Environmental Fluid Mechanics*, 15(2), 373-398 DOI:10.1007/s10652-014-9335-6 ***
44. Crilley, L.R., W. J. Bloss, J. Yin, D. C. S. Beddows, R. M. Harrison, J. D. Allan, D. E. Young, M. Flynn, P. Williams, P. Zotter, A. S. H. Prevot, M. R. Heal, **J. F. Barlow**, C. H. Halios, J. D. Lee, S. Szidat, and C. Mohr (2015) Sources and contributions of wood smoke during winter in London: assessing local and regional influences, *Atmospheric Chemistry and Physics*, 15, 3149-3171,DOI: 10.5194/acp-15-3149-2015 *
43. S. Visser, J. G. Slowik, M. Furger, P. Zotter, N. Bukowiecki1, R. Dressler, U. Flechsig, K. Appel, D. C. Green, A. H. Tremper, D. E. Young, P. I. Williams, J. D. Allan, S. C. Herndon, L. R. Williams, C. Mohr, L. Xu, N. L. Ng, A. Detournay, **J. F. Barlow**, C. H. Halios, Z. L. Fleming, U. Baltensperger, and A. S. H. Prévôt (2014) Kerb and urban increment of highly time-resolved trace elements in PM10, PM2.5 and PM1.0 winter aerosol in London during ClearfLo 2012, *Atmospheric Chemistry and Physics*, 15(5), 2367-2386, DOI:10.5194/acpd-15-2367-2015 *
42. Nobile, R., Vahdati, M., **Barlow, J.F.**, Mewburn-Crook, A. (2014) Unsteady flow simulation of a vertical axis augmented wind turbine: a two-dimensional study, *Journal of Wind Engineering and Industrial Aerodynamics*, 125, 168-179, DOI:10.1016/j.jweia.2013.12.005 **
41. Dunbar, T.M., **Barlow, J.F.** and Belcher, S.E. (2014) An optimal inverse method using Doppler lidar measurements to estimate the surface sensible heat flux, *Boundary-Layer Meteorology*, 150(1), 49-67, DOI: 10.1007/s10546-013-9858-2 ***
40. Drew, D.R., **Barlow, J.F.** and Lane, S.E. (2013) Observations of wind speed profiles over Greater London, UK using a Doppler lidar, *Journal of Wind Engineering and Industrial Aerodynamics*, 121, 98-105, DOI: 10.1016/j.jweia.2013.07.019 *
39. Kubik, M., Brayshaw, D.J., Coker, P.J. and **Barlow, J.F.** (2013) Exploring the role of reanalysis data in simulating wind generation variability over Northern Ireland, *Renewable Energy*, 57, 558-561, DOI: 10.1016/j.renene.2013.02.012 *
38. Lane, S.E., **Barlow, J.F.** and Wood, C.R. (2013) Assessment of a three-beam Doppler lidar wind profiling method for use in urban areas, *Journal of Wind Engineering and Industrial Aerodynamics*, 119, 53-59, DOI: 10.1016/j.jweia.2013.05.010, **
37. Xie, B., Hunt, J.C.R., Carruthers, D.J., Fung, J.C.H. and **Barlow, J.F.** (2013) Structure of the planetary boundary layer over Southeast England: modeling and measurements, *Journal of Geographical Research-Atmospheres*, 118(14), 7799-7818 *
36. Coker, P.J., **Barlow, J.F.**, Cockerill, T. and Shipworth, D. (2013) Measuring significant variability characteristics: an assessment of three UK renewables, *Renewable Energy*, 53, 111-120, DOI: 10.1016/j.renene.2012.11.013 **
35. Drew, D.R., **Barlow, J.F.** and Cockerill, T.T. (2013) Estimating the potential yield of small wind turbines in urban areas: a case for Greater London, UK., *Journal of Wind Engineering and Industrial Aerodynamics*, 115, 104-111, DOI: 10.1016/j.jweia.2013.01.007 **
34. Kubik, M, Coker, P.J., **Barlow, J.F.** and Hunt, C. (2013) A study into the accuracy of using meteorological wind data to estimate turbine generation output, *Renewable Energy*, 51, 153-158, DOI: 10.1016/j.renene.2012.08.084 *
33. Wood, C.R., Pauscher, L., Ward, H.C., Kotthaus, S., **Barlow, J.F.**, Gouvea, M., Lane, S.E. and Grimmond, C.S.B. (2013), Wind observations above an urban river using a new lidar technique, scintillometry and anemometry, *Science of the Total Environment*, 442, 527-533**
32. Harrison, R.M., Dall 'Osto, M., Beddows, D.C.S., Thorpe, A.J., Allan, J., Coe, H., Dorsey, J. Gallagher, M., Martin, C., Whitehead, J., Williams, P., Benton, A.K., Jones, R.L., Langridge, J., Ball, S., Langford, B., Hewitt, C.N., Davison, B., Martin, D., Petersson, K., Henshaw, S.J., White, I.R., Shallcross, D.E., **Barlow, J.F.**, Dunbar, T.M., Davies, F., Nemitz, E.G., Phillips, G. and Helfter, C. (2012) Atmospheric chemistry and physics in the atmosphere of a developed megacity (London): an overview of the REPARTEE experiment and its conclusions, *Atmospheric Chemistry and Physics*, 12(6), 3065 -3114, DOI: 10.5194/acp-12-3065-2012 **
31. Sawaf, S., **Barlow, J.F.**, Essah, E., Broadbent, J., Gregson, B. (2012) Wind lobby analysis: effects of uncontrolled ventilation in food supermarkets, Proceedings of the Seventh International Cold Climate HVAC Conference, Canada, Nov 12-14 2012, ASHRAE, 396-403**
30. **Barlow, J.F.**, Harrison, J., Robins, A.G. and Wood, C.R. (2011) A wind-tunnel study of flow distortion at a meteorological sensor on top of the BT Tower, London, UK, *Journal of Wind Engineering and Industrial Aerodynamics*, 99(9) SI, 899-907, doi:10.1016/j.jweia.2011.05.001 ***
29. Takimoto, H., Sato, A., **Barlow, J.F.**, Moriwaki, R., Onomura, S. and Kanda, M. (2011) PIV measurements of turbulent flow within an outdoor urban scale model and flushing motions in urban canopy layers, *Boundary-Layer Meteorol.*,140 (2), 295-314, doi: 10.1007/s10546-011-9612-6 **
28. Martin, D.E., Petersson K.F., White, I.R., Henshaw S.J., Nickless G., Lovelock, A., **Barlow, J.F.**, Dunbar, T., Wood, C.R. and D.E. Shallcross (2011), Tracer concentration profiles measured in central London as part of the REPARTEE campaign, *Atmospheric Chemistry and Physic*,11, 227-239, DOI: 10.5194/acp-11-227-2011 **

27. Helfter, C., Famulari, D., Phillips, G.J., **Barlow, J.F.**, Wood, C.R., Grimmond, C.S.B. and Nemitz, E.(2011) Controls of carbon dioxide concentrations and fluxes above central London, *Atmospheric Chemistry and Physics*, 11, 1913-1928, doi:10.5194/acp-11-1913-2011**
26. Helfter, C., Famulari, D., Phillips, G.J., **Barlow, J.F.**, Wood, C.R., Grimmond, C.S.B. and Nemitz, E.(2011) Controls of carbon dioxide concentrations and fluxes above central London (vol 11, pg 1913, 2011), correction, *Atmospheric Chemistry and Physics*, 11, 2081-2081, doi:10.5194/acp-11-2081-2011*
25. **Barlow, J.F.**, Dunbar, T.M., Nemitz, E.G., Wood, C.R., Gallagher, M.W., Davies, F., O'Connor, E. and Harrison, R.M. (2011) Boundary layer dynamics over London, UK, as observed using Doppler lidar, *Atmospheric Chemistry and Physics*, 11, 2111-2125 ***
24. Dall'Osto, M., Thorpe, A., Beddows, D.C.S., Harrison, R.M., **Barlow, J.F.**, Dunbar, T., Williams, P.I. and Coe, H. (2011) Remarkable dynamics of nanoparticles in the urban atmosphere, *Atmospheric Chemistry and Physics* , 10, 30651-30689, doi:10.5194/acp-11-6623-2011, **
23. Martin, D.E., Nickless, G., Price, C.S., Britter, R.E., Neophytou, M.K., Cheng, H., Robins, A.G., Dobre, A., Belcher, S.E., **Barlow, J.F.**, Tomlin, A.S., Smalley, R.J., Tate, J.E., Colvile, R.N., Arnold, S.J. and Shallcross, D.E. (2010) Urban tracer dispersion experiment in London (DAPPLE) 2003: field study and comparison with empirical prediction, *Atmospheric Science Letters*, 11(4), 241-248*
22. Wood, C.R., Lacser, A., **Barlow J.F.**, Padhra, A., Belcher, S.E., Nemitz, E., Helfter, C., Famulari, D. and Grimmond, C.S.B. (2010) Turbulent flow at 190 m height above London during 2006-2008: a climatology and the applicability of similarity theory, *Boundary Layer Meteorology*, 137(1), 77-96 **
21. Balogun, A.A.,Tomlin, A.S., Wood, C.R., **Barlow, J.F.**, Belcher, S.E., Smalley, R.S., Lingard, J.J.N., Arnold, S.A., Dobre, A., Robins, A.G., Martin, D., and Shallcross, D.E. (2010), In-street wind direction variability in the vicinity of a busy intersection in central London, *Boundary-Layer Meteorology*, 136(3), 489-513 **
20. Martin, D.E., Price, C.S., White, I.R., Nickless, G., Petersson, K.F., Britter, R.E., Robins, A.G., Belcher, S.E., **Barlow, J.F.**, Neophytou, M.K., Arnold, S.J., Tomlin, A.S., Smalley, R.J., and Shallcross, D.E. (2010) Urban tracer dispersion experiments during the second DAPPLE field campaign in London 2004, *Atmospheric Environment*, 44(25), 3043-3052 *
19. Grimmond, C.S.B., Blackett, M., Best, M.J., **Barlow, J.**, Baik, J.J., Belcher, S.E., Bohnenstengel, S.I., Calmet, I., Chen, F., Dandou, A., Fortuniak, K., Gouvea, M.L., Hamdi, R., Hendry, M., Kawai, T., Kawamoto, Y., Kondo, H., Krayenhoff, E.S., Lee, S.H., Loridan, T., Martilli, A., Masson, V., Miao, S., Oleson, K., Pigeon, G., Porson, A., Ryu, Y.H., Salamanca, F., Shashua-Bar, L., Steeneveld, G.J., Tombrou, M., Voogt, J., Young, D., Zhang, N. (2010) The International Urban Energy Balance Models Comparison Project: First Results from Phase 1, *Journal of Applied Meteorology and Climatology*, 49(6), 1268-1292**
18. Wood, C.R., Clark, S.J., **Barlow, J.F.**, and Chapman, J.W. (2010) Layers of nocturnal insect migrants at high-altitude: the influence of atmospheric conditions on their formation, *Agricultural and Forest Entomology*, 12(1), 113-121 **
17. **Barlow, J.F.**, Dobre, A., Smalley, R.J., Arnold, S. J., Tomlin, A.S., and Belcher, S.E.(2009) Referencing of street-level flows: results from the DAPPLE 2004 campaign in London, UK. *Atmospheric Environment*, 43, 5536-5544 ***
16. Tomlin, A.S., Smalley, R.J.. Tate, J.E., Arnold, S.J., Dobre, A., **Barlow, J.F.**, Belcher, S.E. and Robins, A. (2009) A field study of factors influencing the concentrations of a traffic-related pollutant in the vicinity of a complex urban junction. *Atmospheric Environment*, 43(32), 5027-5037 **
15. Wood, C.R., Reynolds, D.R., Wells, P.M., **Barlow, J.F.**, Woiwod, I.P. and Chapman, J.W. (2009) Flight periodicity and the vertical distribution of high-altitude moth migration over southern Britain, *Bulletin of Entomological Research*, 99(5), 525-535 doi:10.1017/S0007485308006548 **
14. Wood, C.R., Arnold, S.J., Balogun, A.A., **Barlow, J.F.**, Belcher, S.E., Britter, R.E., Cheng, H., Dobre, A., Lingard, J.J.N., Martin, D., Neophytou, M., Petersson, F.K., Robins, A.G., Shallcross, D.E., Smalley, R.J., Tate, J.E., Tomlin, A.S. and White, I.R. (2009) Dispersion experiments in central London: the 2007 DAPPLE project, *Bulletin of the American Meteorological Society*, 90, 955-969 **
13. Shallcross, S.E., Martin, D. , Price, C.S., Nickless, G., White, I.R., Petersson, F., Britter, R.E., Neophytou, M., Tate, J.E., Tomlin, A.S., **Barlow, J.F.** and Robins, A.G. (2009) Short-range urban dispersion experiments using fixed and moving sources, *Atmospheric Science Letters*, 10(2), 59-65 *
12. Cai, X-M., **Barlow, J.F.** and Belcher, S.E. (2008) Dispersion and transfer of passive pollutants in and above street canyons – Large eddy simulations, *Atmospheric Environment*, 42 (23), 5885-5895 **
11. **Barlow, J.F.**, Rooney, G.G., von Hunerbein, S. and Bradley, S.G. (2008), Relating urban surface layer structure to upwind terrain for the Salford experiment (Salfex), *Boundary Layer Meteorology*, 127 (2), 173-191 ***
10. Pascheke, F., **Barlow, J.F.** and Robins, A. (2008) Wind tunnel modelling of dispersion from a scalar area source in urban-like roughness, *Boundary Layer Meteorology*, 126, 103-124 ***
9. Wood, C.R., Chapman, J.W., Reynolds, D.R., **Barlow, J.F.**, Smith, A.D. and Woiwod, I.P. (2006) The influence of the atmospheric boundary layer on nocturnal layers of noctuids and other moths migrating over southern Britain, *International Journal of Biometeorology*, 50 (4), 193-204 **

8. Dobre, A., Arnold, S.J., Smalley, R.J., Boddy, J.W.D., **Barlow, J.F.**, Tomlin, A.S. and Belcher, S.E. (2005) Flow field measurements in the proximity of an urban intersection in London, UK, *Atmospheric Environment*, 39(26), 4647-4657 **
7. Reynolds, D.R., Chapman, J.W., Edwards, A.S., Smith, A.D., Wood, C.R., **Barlow, J.F.** and Woiwod, I.P. (2005) Radar studies of the vertical distribution of insects migrating over southern Britain: the influence of temperature inversions on nocturnal layer concentrations, *Bulletin of Entomological Research*, 95(3), 259-274 *
6. Rooney, G.G., Longley, I.D., and **Barlow, J.F.** (2005) Variation of urban momentum roughness length with land use in the upwind source area, as observed in two UK cities, *Boundary Layer Meteorology*, 115(1), 69-84 **
5. **Barlow, J.F.**, Harman, I.N. and Belcher, S.E. (2004) Scalar fluxes from urban street canyons. Part I: Laboratory simulation, *Boundary Layer Meteorology*, 113(3), 369-385 ***
4. Harman, I.N., **Barlow, J.F.** and Belcher, S.E. (2004) Scalar fluxes from urban street canyons. Part II: Model, *Boundary Layer Meteorology*, 113(3), 387-409 ***
3. Arnold, S.J., ApSimon, H., **Barlow, J.**, Belcher, S., Bell, M., Boddy, D., Britter, R., Cheng, H., Clark, R., Colvile, R., Dimitroulopoulou, Dobre, A, Greally, B., Kaur, S., Knights, A., Lawton, T., Makepeace, A., Martin, D., Neophytou, M., Neville, S., Niewenhuijsen, M., Nickless, G., Price, C., Robins, A., Shallcross, D., Simmonds, P., Smalley, R., Tate, J., Tomlin, A., Wang, H., Walsh, P. (2004) Introduction to the DAPPLE Air Pollution Project, *Science of the Total Environment*, 332, 139-153 **
2. Longley, I.D., Gallagher, M.W., Dorsey, J.R. and **Barlow, J.F.** (2004) Short-term measurements of airflow and turbulence in two street canyons in Manchester, *Atmospheric Environment*, 38(1), 69-79 **
1. **Barlow, J.F.** and Belcher, S.E. (2002) A wind tunnel model for quantifying fluxes in the urban boundary layer, *Boundary Layer Meteorology*, 104(1), 131-150 ***

Book chapters:

Barlow, J.F. (2013) "The wind that shakes the buildings: wind engineering from a boundary layer meteorology perspective", in Owen, J., Sterling, M., Hargreaves, D and Baker (2013). Fifty Years of Wind Engineering. Prestigious lectures from the Sixth European and African Conference on Wind Engineering. ISBN-13: 9780704428348 ***

Grimmond, C.S.B., Best, M., **Barlow, J** , Arnfield, A.J., Baik, J-J, Belcher, S.E., Bruse, M., Calmet, I., Chen, F., Clark, P., Dandou, A., Erell, E., Fortuniak, K., Hamdi, R., Kanda, M., Kawai, T., Kondo, H., Krayenhoff, S., Lee, S.H., Limor, S-B., Martilli, A., Masson, V., Miao, S., Mills, G., Moriwaki, R., Oleson, K., Porson, A., Sievers, U., Tombrou, M., Voogt, J., Williamson, T., (2010) "Urban surface energy balance models: model characteristics and methodology for a comparison study", in "Meteorological and Air Quality Models for Urban Areas", ed. Baklanov, A., Grimmond, S., Mahura, A. and Athanassiadou, M., Springer-Verlag, pp183, DOI: 10.1007/978-3-642-00298-4_11 **

Barlow, J.F. (2009): "Boundary Layer Meteorology and Atmospheric Dispersion", in "Atmospheric Science for Environmental Scientists", ed. C.N. Hewitt, A.V. Jackson, John Wiley and Sons, ISBN 1405156902, 9781405156905 ***

Reports:

Barlow, J.F. and O. Coceal (2009) A review of urban roughness sublayer turbulence, Technical report 527, Met Office. ***

Book reviews:

Barlow, J.F. Surface-based remote sensing of the atmospheric boundary layer by Stefan Emeis, *Boundary-Layer Meteorology*, DOI 10.1007/s10546-011-9659-4 ***

2. Research students supervised

9 students successfully completed* (as of August 2015)

2015-18	Christoph Kent (NERC, CASE Award with Risk Management Solutions, CASE supervisor D. Gatey; 2nd supervisor, 1st supervisor Sue Grimmond), "Urban gust estimates for insurance portfolio loss"
2013-16	Hannah Gough (EPSRC DTG funded, 1st supervisor, joint with Vincent Luo (SCME)) "The effect of urban climate on building ventilation"
2014-17	Duick Young (NERC funded, 2nd supervisor, joint with Peter Clark), "Integrating vegetation in an urban surface energy balance scheme"
2011-15	Judith McConnell (NERC/NCAS funded, 1st supervisor, joint with Omduth Coceal) "The turbulent structure of the urban boundary layer"

2011-15	Sahm Sawaf (EPSRC funded, EngD, 1st supervisor, joint with Emmanuel Essah) "Energy reduction solutions within retail outlets" (previous student: Elizabeth Mottram)
2010-15	Wagner Nogueira Neto (EPSRC, CASE award with Ove Arup (J. Hacker/A. Allsop), sole supervisor) "The dependence of urban climate on building layout and design"
*2010-14	Aidan Brocklehurst (EPSRC, sole supervisor) "The effect of urban climate on urban energy supply and demand"
*2010-14	Sian Lane (EPSRC, CASE award with Met Office (H. Lean), 1st supervisor) "Assessing the validity of urban scale numerical weather prediction"
*2009-13	Rosario Nobile (EPSRC funded, EngD, 2nd supervisor, joint with Maria Vahdati) "Building integrated wind energy"
*2009-13	Marek Kubik (EPSRC funded, EngD, 2nd supervisor, joint with Phil Coker) "The impact of high levels of renewable generation on an existing fossil fuel based electricity market"
*2008-11	Dan Drew (EPSRC funded, 2nd supervisor, joint with Tim Cockerill) "Micro-wind turbines in urban areas".
*2007-11	Tyrone Dunbar (NERC funded, 2nd supervisor, joint with Stephen Belcher) "Using inverse modelling techniques with lidar measurements to estimate surface sensible heat flux".
*2007-14	Member of PhD. Committee for Sean Arms, University of Oklahoma.
*2005-9	Anil Padhra (NERC funded, sole supervisor, CASE award with Met Office (D. Thompson, D. Middleton)). "Characterising atmospheric response to urban surface heterogeneity".
*2005-11	Phil Coker (EPSRC funded, 2nd supervisor, joint with Tim Cockerill and David Shipworth, School of Construction Management). "Assessing the variability of UK renewables".
*2003-7	Curtis Wood (BBSRC funded, 1st supervisor, joint supervision with Rothamsted Research, CASE award with Met Office (P. Clark)). "The influence of the nocturnal boundary layer on insect layering".
2002-	Member of Monitoring Committee for more than 30 PhD students, University of Reading.

Visiting international research student supervision:

2011	Luca Caporosa (7 months, University of Bologna)
2009-10	Hiroshi Takimoto (6 months, Toyko Institute of Technology)
2010-11	Noora Eresmaa (9 months, Finnish Meteorological Institute)

3. Grants and contracts

2014-16	"Clustering Effects of Offshore Windfarms", National Grid, £243,489, Principal Investigator, supervising 1 PDRA
2013-18	"Refresh: Remodelling Building Design Sustainability from a Human Centred Approach, EPSRC, £847,176 (Reading), £2.2 million in total, partners Noakes (Leeds), Schraefel (Southampton)
2013	"Impact of extreme events on power production at the scale of a single wind-farm", National Grid, £145,000, Principal Investigator, supervising 1 PDRA
2011-18	"Industrial Doctorate Centre: Technologies for Sustainable Built Environments", EPSRC Centre for Doctoral Training, £5,967,528, Principal Investigator/Director (from 1.10.11 to 30.09.14; plus 4 Co-Is, Reading)
2010-13	"Clean Air for London: ClearfLo", Consortium grant, NERC, £488, 654 (Reading), £3.2 million in total, Co-Investigator in charge of BT Tower measurement platform, (PI S. Belcher, Reading, plus 17 others across 10 institutions)
2009-14	"Advanced Climate Technology Urban Atmospheric Laboratory (ACTUAL)", EPSRC Challenging Engineering award, £1,023,188. Principal Investigator, supervising 1 PDRA, 1 Technician and 3 PhD students, leading an urban climate research group, initiating research across engineering-meteorology disciplines
2008	"Urban Meteorological Impacts for Dispersion", Met Office, £20,425, Principal Investigator, writing literature review on flow properties in urban streets to inform pollutant dispersion modelling
2006-9	"Dispersion experiments in London: HO-DAPPLE", Home Office, £117,250 (Reading), £828,637 in total, Co-Investigator, co-supervising 1 PDRA, supervising 1 Technician, designing and co-ordinating full-scale tracer experiments in London (PI A. Robins, Surrey, plus 7 institutions)
2005-8	"All weather Doppler lidar for clouds and boundary layer", NERC, £149,597. Co-Investigator (PI A. Illingworth, plus 4 Co-I's, Reading).
2004-6	"Quantifying turbulent ventilation of heat and pollution from urban areas", EPSRC First Grant Award, £97,581. Principal Investigator, supervising 1 PDRA and 1 Technician, leading wind tunnel experimental design and development of novel methodology
2002-5	"Dispersion of air pollution and penetration into the local environment (DAPPLE)", EPSRC, £149,478 (Reading), £1,543,360 over 6 Research Organisations. Co-Investigator, co-supervising 2 PDRAs, designing full-scale flow and tracer measurements in London.

4. Evidence of research esteem

Invited talks:
International:

2015	Urban Meteorology, Urban Physics Winter School, Ascona, Switzerland, 26-30 January 2015
2015	Urban boundary layer flows – from city to neighbourhood to building scale, University of Hong Kong, 2 February 2015
2015	Urban Meteorology, Workshop for architecture students at Chinese University of Hong Kong, 31 January – 1 February 2015
2014	Sustainable built environment research in partnership with industry – a view from the UK, Penn State, USA, 31 March 2014
2014	Observations of urban ventilation at different scales in London, invited speaker at workshop "Ventilation in Cities", Vietnamese-German University, Ho Chi Minh City, Vietnam, 23rd January 2014
2014	An intercomparison of urban and rural boundary layers…, Hong Kong Meteorological Observatory, 19th January 2014
2014	Knowledge of Urban Climate: using it to reduce risks to health and well-being, invited speaker at workshop "Towards a Healthy City", Chinese University of Hong Kong, 18th January 2014
2014	Urban Meteorology, Workshop for architecture students at Chinese University of Hong Kong, 17th January 2014
2013	Urban Meteorology, Urban Physics Autumn School, Halkidiki, Greece, 14-19 October 2013
2013	Boundary Layer Meteorology, Prestige lecture, 6th European and African Conference on Wind Engineering, 7-11 July 2013
2012	Progress in measuring and modelling the urban boundary layer, 8th International Conference on Urban Climatology, Dublin 6-10th August 2012, keynote talk
2012	Technologies for sustainable built environments (TSBE), 15th March 2012, CSIRO Urban Science Symposium, 13-15 March 2012, Melbourne, Australia
2012	Building an urban atmospheric laboratory in London: lessons learnt from a decade of experiments, 14th March 2012, CSIRO Urban Science Symposium, 13-15 March 2012, Melbourne, Australia
2008	Surface layer response to a heterogeneous urban canopy, 14th May 2008, University of Auckland, New Zealand (paid visit)
2008	The DAPPLE experiment: flow patterns controlling dispersion in urban areas, 7th April 2008, CSIRO, Canberra, Australia (paid visit)
2007	Flow patterns controlling dispersion in urban areas, Tokyo Institute of Technology, Tokyo, Japan, 17th Oct 2007 (paid visit)
2006	Effect of urban morphology on scalar transport in the urban roughness sublayer, invited participant plus talk, Geophysical Turbulence Program Workshop on Turbulence and Scalar Transport in Roughness Sublayers, National Center for Atmospheric Research (NCAR), Boulder, US, 28th September 2006. (paid visit)
2006	Scalar transport in urban canopies, University of Oklahoma, 21st September 2006

National:

2015	Measuring and modelling urban microclimate, University College London invited seminar, 10 March 2015
2015	Urban Climate, Architectural Association: School of Architecture (EmTech), London, 6 March 2015 (honorarium paid)
2014	Urban boundary layers – investigating urban flows from building to city scale, University of Cambridge, 11 March 2014
2013	Uses of Doppler lidar for urban meteorology, NCAS Forum on Boundary Layer Remote Sensing, 24th September, 2013
2013	The effect of urban flows on pollutant ingress into buildings – results from experiments in central London, Atmospheric Dispersion Modelling Liaison Committee Autumn Forum, Harwell, U.K., 17th September 2014
2012	Urban Meteorology – lessons learnt from a decade of experiments in London, UK Wind Engineering Society Conference, Southampton 10-12th September 2012, keynote talk
2012	Measuring fluxes over urban areas: results from observations in London, 13th February 2012, Prime Minister's Initiative 2 (PMI2) workshop, British Council sponsored, Newcastle University, 13-14th Feb 2012
2012	Urban Climate, Architectural Association: School of Architecture (EmTech), London, 22nd February 2012 (honorarium paid)

2011	Urban Climate, Architectural Association: School of Architecture (EmTech), London, 16th February 2011 (honorarium paid)
2011	Urban Boundary Layer, Wind Engineering Society Technical Meeting, ICE, 19th January 2011
2009	Urban Boundary Layer Meteorology, University College London, 19th November 2009
2009	Meteorological measurements in urban areas, National Physical Laboratory (Teddington), 21st April 2009
2008	Measurements and models of the urban roughness sublayer, University of Southampton, 17th December 2008
2007	The DAPPLE experiment: dispersion experiments in central London, Imperial College London, 22nd May 2007
2007	Measurements to support dispersion experiments, Royal Meteorological Society Special Interest Group on Instrumentation meeting, University of Birmingham, 19th March 2007
2006	SimCity in the wind tunnel: physical modelling of turbulent flow in urban areas, School of Engineering, University of Birmingham, 15th November 2006
2006	Experimental investigation of urban boundary layers, The Met Office, 6th October 2006
2005	Transfer processes in urban canopies, ATREUS research project meeting, Cambridge, 20th April 2005

Citations:

My published papers currently have 958 citations (h-factor 19) to August 2015. Search completed using ISI Web of Knowledge (Address=Reading AND Author=Barlow J*, timespan=2002-2012, exclude Janine Barlow)

Contribution to research activities at national/international level:

International:

2012	Member of Scientific Organising Committee for 8th International Conference on Urban Climatology, Dublin, 6-10th August 2012
2010-14	Member of Board of Urban Environment, American Meteorological Society
2003-7	Elected Member of Board of the International Association of Urban Climate. Duties included Chair of Membership Committee
2005-6	Member of Scientific Organising Committee for 6th International Conference on Urban Climatology, Gothenburg, 2006
2004, 2006	Member of Assessment Committee for Assistant/Associate Professorship candidates, University of Bergen

- Session chair at International Conferences: 2003 ICUC-5 (Poland), 2005 Physmod (Canada), 2005, 2007 Royal Meteorological Society (Manchester, Edinburgh), 2008 Wind and Structures (Korea), 2010 Wind Engineering (UK), 2014 AMS BLT (Leeds)
- Reviewer for many international scientific journals (Boundary Layer Meteorology, Atmospheric Environment, Journal of Applied Meteorology, Journal of Wind Engineering and Industrial Aerodynamics etc.).

National:

2014	PhD external examiner, Matthew Haines, University of Birmingham, August 2014
2013-	Co-opted member of Steering Committee for Wind Engineering Society
2013	PhD external examiner, David Tupman, University of Leeds, December 2013
2013	PhD external examiner, Joel Millward-Hopkins, University of Leeds, July 2013
2012	PhD external examiner, Stella Karra, University College London, October 2012
2011	PhD external examiner, Jean Claus, University of Southampton, December 2011
2011-	Honorary Reader in Energy Institute, University College London
2011-15	Co-chair of Air Pollution Research In London (APRIL) knowledge exchange network
2010	Organiser of Royal Meteorological Society National Meeting "Adapting our Cities for Future Climates", 17th Feb 2010
2009	Keynote speaker, and Member of Organising Committee for National Centre for Atmospheric Science (NCAS) sponsored Workshop on "Urban roughness sublayers – from measurements and CFD to predictive models", 30th-31st March 2009, Reading.
2008-	National Co-ordinator of environmental research conducted on the BT Tower, London
2008-11	Member of Steering Committee for Air Pollution Research In London (APRIL) network
2008-	Member of Wind Engineering Society (Institution of Civil Engineers)
2006	Co-author of NERC National Centre for Atmospheric Science Urban Meteorology Programme Strategy
2006	Organiser of Royal Meteorological Society Wednesday Meeting on "Urban Meteorology", 15th February 2006
2007	PhD external examiner, Matt Rigby, Imperial College London, December 2007

- Reviewer of proposals for NERC, EPSRC

Awards:

1997 C.N Davies Award from The Aerosol Society for PhD work

Collaborative research:

I am a major contributor to field-based research within the UK, particularly engaged with urban fieldwork investigating pollution process in UK cities. I was a co-author of the National Centre for Atmospheric Science (NCAS) Urban Meteorology Strategy (2006). I have taken part in the following urban observational campaigns: PUMA (2000), Salfex (2002, fieldwork manager), DAPPLE (2003-2006), DAPPLE-HO (2006-2009), REPARTEE (2007), ACTUAL (2009-2014), ClearfLo (2010-2013).

Research leadership within the School:

I lead a group of urban climate researchers (currently 8 members, two of whom are TSBE EngD research engineers) and am joint leader of the Boundary Layer Meteorology group, alongside S. Belcher. Through my role as Laboratories Manager (2008-2011), I was responsible for co-ordinating technical support of PhD and funded research projects, and maintaining a well-found laboratory. I successfully negotiated contracts for lab- and field-based research support services with DEFRA and Whitfield Solar totalling £17k p.a.

Contribution to research activities within the University:

I have co-supervised MSc and PhD projects with colleagues in the School of Construction Management and Engineering. I set up the inter-School Energy Research Group in 2008, and I am now Director of the interdisciplinary TSBE Centre. I have been a Walker Institute Research Associate since 2007, currently actively engaged in the Climate-KIC project. I have been an interview panel member for 4 lectureships and 2 RCUK fellowships. I have been an internal examiner for 5 PhD students, and have been staff development reviewer for up to 8 people, including post-doctoral research assistants. I have submitted four papers and esteem indicators to all RAEs since becoming a lecturer (2003, 2008), and will be submitted fully as part of REF 2014.

C Knowledge transfer, enterprise and outreach

Government and Industry:

2014	Sian Lane's thesis delivered as part of Met Office CASE award
2014	Talk to local group of Chartered Institution Of Builders, September 2014
2014	Invited speaker at Smart and Sustainable Cities event, organised by Commonwealth Environmental Investment Platform, 6th May 2014
2014	Invited speaker at workshop for Chartered Institute of Building Services Engineers, UCL, London, April 2014
2013	"Urban Climate Research" presentation to visiting DEFRA civil servants including Prof. Ian Boyd, July 2013
2013	Invited speaker at Cleaner Air event, Greater London Authority, January 2013
2012	"London and Climate Change", presentation at Cushman and Wakefield, London, 8th October 2012
2011	Organiser of APRIL network meeting "The role(s) of vegetation in urban areas", 3rd October 2011
2011-15	Sahm Sawaf, EngD project with Johnson Construction
2010	"Urban Climate Research" presentation to visiting DEFRA civil servants, 14th April 2010
2010	Organiser of APRIL network meeting "Science outcomes from research on the BT Tower, London", 26th January 2010
2010	Anil Padhra's PhD thesis delivered as part of Met Office CASE award.
2009-13	Marek Kubik, EngD project with AES (Alternative Energy Supplies)
2009-13	Rosario Nobile, EngD project with Matilda's Planet
2009	Witness for Renewable Energy Systems, Ltd. at public inquiry into Den Brook wind farm, report writing/inquiry appearance, £3840
2008-11	Laboratory Manager, Department of Meteorology: negotiated service contracts for DEFRA, Whitfield Solar (total £17k p.a.)
2007	Curtis Wood's PhD thesis delivered as part of Met Office CASE award.
2006-9	Contributed to interim reports delivered to Home Office as part of DAPPLE-HO project.
2006-	"The impact of buildings on local wind flows", £6,048. Consultancy Agreement with Peter Brett Associates.
2006	Gave two presentations to audience including members of London local authorities, Westminster City Council, Greater London Authority, Transport for London, etc. at DAPPLE conference, 16th May 2006, organised through the APRIL network.

1998 Consultancy Agreement with Aboricultural Advisory and Information Information Service. Report written (Barlow, J.F. and Harrison, R.G. (1998) Measuring tree shadow length, Aboricultural Advisory and Information Service.)

Wider community:

2015 Interview on ITN News at Ten, commenting on Committee on Climate Change report, 30 June 2015
2014 Interview on BBC Chris Evans Breakfast Show on "snoozing in the heat", 24th July 2014
2013 Interview on BBC Five Live on heatwave, 22nd July 2013
2013 Interview on BBC News 24 regarding heatwave, 17th July 2013
2013 Royal Metorological Society, SE Group, Reading Town Hall, June 2013
2013 Contribution to New Scientist article "Oases of Cool" by Kat Austen, 20th April 2013
2012 "Hot in the City: Urban Heat Islands Explained", public lecture, University of Reading, 14th Nov 2012 (plus interview on BBC Berkshire ahead of event)
2012 Interview on BBC News at Ten on Clearflo project, 8th Aug 2012
2012 One of the "Experts" in The Cabaret of Ideas, Milton Keynes International Festival, 20-29th July 2012
2011 Appearance in BBC programme "Horizon – What is One Degree?", 10th January 2011
2010 Appearance in BBC London programme "Wild Weather – Climate in the City", 20th September 2010
2010 Member of panel discussion at Royal Society, "Our buildings, our neighbourhoods, our cities?", 13th September 2010
2010 Exhibition piece "Ice-Traffic", at Royal Festival Hall as part of Royal Society "See Further" festival, July 2010
2008 Exhibition piece "The Breathing City", at Lighthouse, Brighton as part of the Expo Brighton Arts Festival, 4-6th July 2008.
2007 "Urban Atmospheres", talk given to Reading Friends of the Earth group, 8th August 2007
2006- Annual talks to Emmbrook Court (Sheltered Housing Scheme) in Reading on weather-related topics.
2006 "Pollution: from city streets to the global scale", talk and laboratory demonstrations given as part of Department of Meteorology 40th Anniversary Open Day, 6th May 2006
2004 Laboratory demonstrations given at Department of Meteorology Open Day, as part of National Science Week.
2001- Laboratory and Atmospheric Observatory demonstrations given to Friends of the University, French National Weather Service visit, Talented and Gifted Children visits, etc.

D Teaching

Teaching load (in brackets: credits, approx. student numbers, contact hours):

2014 MTMG34 Experiencing the Weather (10cr, ~30, 40hrs)
2010-13 MT37J/MT49E Boundary Layer Meteorology (Part B: practicals) (10cr, ~23, 25hrs)
2010-11 CEMRUS Sustainable Urban Systems, contributed 2 hour lecture
2009-11 MT374XH Arran fieldcourse (10cr, ~25,55hrs)
2009-10 MTMG49 Boundary Layer Meteorology and Micrometeorology (10cr, ~30, 25hrs)
2006-08 Co-supervision of visiting U.S. undergraduate project students, with Petra Klein at University of Oklahoma
2006-07 ES2X6 Environmental Earth Science field class, Tenerife (10cr, ~20, 60hrs)
2005-08 ES2A5 Environmental Systems, contributed 2 hour lecture, exam questions
2004-09 MT36E Boundary Layer Meteorology (20cr, ~23, 42hrs) (became MT37J/MT49E in 2010)
2004-10 CEMIB9: Module 9: Sustainable Design, Construction and Operation, MSc Intelligent Buildings, contributed 3 hour lecture
2004- MTMG05 Professional Skills, MSc Team project supervisor, biennial, (10cr,~4,5hrs)
2003-04 MT26F Atmospheric Analogues (10cr, ~20, 17hrs)
2002-06 Academic tutor for MSc students
2002-05 MTMW20 Fluid Dynamics of the Atmosphere and Oceans (Practicals) (10/20cr, ~25, 12hrs)
2002-05 MTMG34 Experiencing the Weather (10cr, ~30, 40hrs)
2002-03 MT626 Microscale Meteorology (10cr, ~23,20hrs) (became MT36E in 2004)
2002-03 MT627 Surface Layer Processes (10cr, ~23, 20hrs) (became MT36E in 2004)
2002- Supervisior or co-supervisor of more than 15 BSc project students
2002- Weather and Climate Discussion – presenter, contributor
2000- Supervisor or co-supervisor of more than 20 MSc dissertation students

Other teaching support activities include Undergraduate Personal Tutor. NB: teaching load reduced as of 1.10.11 to 30.09.14 due to starting as Director of TSBE Centre 0.5 FTE.

Quality of teaching and commitment to CPD at University and national level:
I have taught in a wide range of teaching methods (e.g. lectures, small group tutorials, problem classes) but have a special interest in teaching and learning science through practical methods (i.e. lab and field based practical work). This was the focus of my PGCAP project, for which I was nominated for the Project Prize in 2005. My ability to explain my science area clearly has been consistently highly rated in student feedback, and led to my being invited to write a chapter for the textbook "Atmospheric Science for Environmental Scientists" (published 2009, John Wiley), and to give a postgraduate level lecture at the NCAS Summer School, Sep 2011. Since 2013 I have been a regular contributor to postgraduate teaching at international level in urban climate.

2011	NCAS Summer School, contributed lecture on "Urban Meteorology" (Sep 2011)
2009	Barlow, J.F.: "Boundary Layer Meteorology and Atmospheric Dispersion", in "Atmospheric Science for Environmental Scientists", ed. C.N. Hewitt, A.V. Jackson, John Wiley and Sons, ISBN 1405156902, 9781405156905 ***
2005	Post-Graduate Certificate in Academic Practice (with Distinction). Project Dissertation: "Efficiency vs. Efficacy: teaching practical courses in the face of increasing student numbers", nominated for project prize. Reflective Portfolio used within CSTD courses as example of best practice.
2004	Departmental representative to Periodic Review Panel (Library Co-ordinator), contributor to report on use of library in support of student learning.
2002-	Feedback from students across all my taught modules consistently states that my teaching is well paced, "very clear explanations", I supply "clear notes", and I am described as being "very enthusiastic".

Enhancement to curriculum development and delivery:
I am committed to pulling through research excellence into teaching excellence. This underpinned two successful bids to upgrade Departmental instrumentation (total £25k) to what I perceived to be research grade equipment for use in the field and wind tunnel laboratory, and subsequent redevelopment of module material. I have involved both undergraduate and postgraduate students in my field-based research consortium projects.

2010-11	Secured Departmental funds (£15k) to buy infra-red gas analyser, developed its use in MSc dissertation, undergraduate and postgraduate practical classes to give experience of research grade experimentation. Rewrote MT37J module to teach latest micrometeorological research methods.
2009-11	Re-timetabling of MT37J/MT49E Boundary Layer Meteorology to provide more consistent fieldwork-based learning (improved timing with regard to pre-requisite module MT26E Surface Energy Exchange and optional MT374XH Arran fieldcourse).
2004	Development of MT36E Boundary Layer Meteorology module out of MT626 Microscale Meteorology and MT627 Surface Layer Processes which I had previously been teaching. Re-designed to satisfy the more intensive timetabling of the practical content (3 weeks instead of 7 weeks) without compromising on learning quality. Used as example in PGCAP project dissertation.
2004	Secured Departmental funds (£10k) to replace wind tunnel instrumentation to allow research grade flow measurement for use in student projects.

Supporting students' learning and development:
Since being a lecturer I have always taken on substantial roles at Departmental level in supporting the infrastructure for student learning. As Laboratories Manager I developed a good rapport with technical staff and implemented changes in staffing structure to produce a better functioning team in support of lab- and field-based teaching. Through my efforts I led a nomination bid in 2009 which resulted in a CDoTL Team Award for Outstanding Contributions to Teaching and Learning Support for two Lab and two IT staff comprising the MetFiDAS (short for Meteorology Field Data Acquisition System) team. Their meteorological data acquisition system now supports student projects across the University.

2008-11	Manager of Laboratories and Atmospheric Observatory, Department of Meteorology. Responsible for annual budget of £20-30k, team of 6 technicians, delivering technical support for teaching (7 modules lab/field-based content, BSc and MSc practical projects, demonstrations) and research. Implemented restructuring of staff responsibilities with considerable personnel-related challenges (retirements, disciplinary issues, budgeting)
2004-7	Examinations Officer, Department of Meteorology. Responsible for co-ordination of 3 secretaries, delivery of examination papers and results, organisation of MSc level examinations.

2002-4 Library Representative, Department of Meteorology. Responsible for annual budget of £20-30k, supervision of Departmental Librarian. Member of Faculty of Science Library Committee.