

## CURRICULUM VITAE

James A. Voogt

### PERSONAL INFORMATION

Name: James A. Voogt  
Rank: Associate Professor  
Date Tenured: July 1, 2000.  
Full-time or adjunct status: Full-time

### EDUCATION

#### *Degrees*

B.Sc.(H)	Queen's University	Physical Geography	1986
M.Sc.	University of British Columbia	Geography (Climatology)	1989
Ph.D.	University of British Columbia	Geography (Climatology)	1995

#### *Thesis Titles*

Ph.D.: Thermal Remote Sensing of Urban Surface Temperatures. 340 pp.  
Supervisor: Dr. T.R. Oke

M.Sc.: Validation of an Urban Canyon Radiation Model for Nocturnal Long-wave Radiative Fluxes and the Effect of Surface Geometry on Cooling in Urban Canyons. 266 pp.  
Co-Supervisors: Dr. T.R. Oke and Dr. D.G. Steyn

### EMPLOYMENT HISTORY

2000-	Associate Professor	Geography	University of Western Ontario
1995-00	Assistant Professor	Geography	University of Western Ontario
1995	Sessional Lecturer (1 course)	Geography	University of British Columbia
1993	Sessional Lecturer (1 course)	Geography	Simon Fraser University

### ACADEMIC AWARDS AND DISTINCTIONS

2011-12 USC Teaching Honour Roll: For excellence in teaching Geography  
2007 Faculty Scholar (Faculty of Social Science, UWO)  
1995 Canadian Meteorological and Oceanographic Society Graduate Student Prize  
1994 Best Student Presentation, Climate Specialty Group: "Thermal Remote Sensing of the Three-Dimensional Urban Surface." AAG Annual Conference, San Francisco CA.  
1991-92 UBC University Graduate Fellowship  
1990 UBC University Graduate Fellowship (Partial)  
1990 Best Student Presentation, Climate Specialty Group: "Use of a scale model to validate an urban canyon radiation model for nocturnal long-wave radiative fluxes." AAG Annual Conference, Toronto, Ont.  
1986-88 NSERC Graduate Scholarship  
1986 UBC University Graduate Fellowship (Declined)  
1986 Ontario Postgraduate Scholarship (Declined)  
1986 Queen's University Dean's Honour Role

**TEACHING (Last 7 years)****Undergraduate: Primary or co-Course Instructor**

(a/b = half term course, e = essay course, y = full year course)

GEOG 1300a/b Physical Geography

GEOG 2310a/b Weather and Climate

GEOG 3311a/b Micrometeorology

GEOG 3312a/b Human Impacts on Weather and Climate

**Undergraduate: Participation/Guest Lectures**

2012 Geog 2060b World Cities “Cities and Climate

2011, 2010 Geog 3250a Geographic Research: Methods and Issues “Distributions”

2011 Biology 4405G Ecosystem Ecology “The Urban Heat Island”

2005 Env Science 021G Environmental Issues: “Urban Climates”

**Evidence of Teaching Effectiveness**

Summary of Student Ratings: Mean and standard deviation of Questions 1-14. 7 pt scale

	09-10	10-11	11-12	12-13	13-14	14-15	15-16
Geog 1300a/b	5.6 0.9	5.6 1.2		6.1 0.8	5.7 0.9	5.7 1.0	sabbatical
Geog 2310a	5.9 1.1	5.7 1.2			5.3 1.5	6.1 0.9	
Geog 3311a/b	6.1 0.9	5.7 1.2	6.4 0.9	6.2 1.1	6.3 0.8	6.2 1.1	
Geog 3312a/b				5.7 1.0			
Geog 2133a/b					4.8 1.6	5.9 1.1	

Notes:

NR Class results not reported due to small class size.

Summary of Student Ratings: Overall effectiveness (Question 15): mean , standard deviation. 7 pt scale

Course	09-10	10-11	11-12	12-13	13-14	14-15	15-16
Geog 1300a/b	5.8 0.9	5.8 1.1		6.3 0.7	6.0 0.9	6.0 1.0	sabbatical
Geog 2310a/b	6.0 0.9	5.8 1.3			5.5 1.4	6.4 0.6	
Geog 3311a/b	6.3 0.6	6.1 0.9	6.0 1.0	6.3 1.0	6.5 0.5	6.6 1.1	
Geog 3312a/b				6.0 0.8			
Geog 2133a/b					4.8 1.6	6.1 1.0	

**Graduate Teaching: Primary or co-Course Instructor**

Geography 9224 Urban Climatology: Fall 2016, Fall 2014, Winter 2010, Winter 2008

Geography 9220 Advanced Studies in Physical Geography (Micrometeorology) 2014, 2013, 2012

**Graduate Teaching: Participation/Guest Lectures**

2013 EnvrSust 9011a Foundations of Sustainability “Cities and Climate”

**Graduate Supervision**

	Successfully Completed	Number in Progress
Ph.D. Thesis (Supervisor)		1
Master’s Thesis (Supervisor)	6	3
Master's Thesis (Co-supervisor)	1	
Thesis Advisory Committees		
Ph.D.:	5	1
M.Sc.:	5	

**Graduate Thesis Supervised: Ph.D.***In Progress*

Lee, I. Urban thermal climates and human health.

**Graduate Thesis Supervised: M.Sc.***In Progress*

Kurukulaarachchi, D. Green roof energy balance assessment.

Allen, M. Surface urban heat island assessment from ground-based measurements.

Wiechers, T. Thermal characteristics of Toronto residential neighbourhoods

Hilland, R. Temperatures of vertical facets in urban areas.

*Completed*

Dyce, D. 2014. A sensor view model to investigate the influence of tree crowns on effective urban thermal anisotropy.

Nanni, B. E. 2010. Source area variations in urban snow cover and its impact on the radiation budget.

Porter, K. 2009. Multiscale assessment of urban emissivity.

Moscicki, M.A. 2007. A comparison of modelled and observed urban surface temperatures in Toulouse, France.

Krayenhoff, E.S. 2005. A micro-scale 3-D urban energy balance model for studying surface temperatures.

Charron, M. 2001. Microclimate analysis of white pine seedling regeneration in brush-pile treatments.

Soux, A.C. 2000. Modelling surface structure and temperature of relevance to remote sensing of cities. (co-supervisor)

**Visiting Graduate Students**

Shi, Yurong. Visiting PhD student Department of Architecture, South China University of Technology, China. Neighbourhood scale heat island intensity in hot humid regions based on remote sensing. Nov. 2016 – Apr. 2017.

Baptista, Mariana. Visiting MSc student University São Paulo Forest Resources/Forest Ecosystems Conservation Oct 2013-Mar 2014. Emerging Leaders in the Americas Scholarship Program.

## Undergraduate Theses Supervised:

### *In progress*

- Guo, J. B.Sc. 4<sup>th</sup> Year Honors Thesis (Env. Sci.) Estimating the complete urban surface temperature for Toronto, ON Canada.
- Shaposhnikova, M. 4<sup>th</sup> Year Honors Thesis (BSc. Physical Geography) The influence of winds on the surface urban heat island.

### *Completed*

1. Wiechers, T.D. B.Sc. 4<sup>th</sup> Year Honors Thesis (Env. Sci.) Exploring the spatial variation in rainfall across Talbot College roof.
2. Behr, A. B.Sc. 4<sup>th</sup> Year Honors Thesis (Env. Sci.) Spatial distribution of temperature in London ON
3. Wrona, E. B.Sc. 2014 B.Sc. (Physical Geography) Thermal performance of an experimental green roof in London ON, Canada.
4. Basile, S. B.Sc. 2014 B.Sc. (Env. Sci.) Spatial and temporal assessment of albedo of *Sedum spurium* in green roof settings.
5. Kurukulaarachchi, D., 2013. B.Sc. (Env. Sci.) A comparison of the energy balance of green roofs in Calgary, Alberta and London, ON.
6. Santana, P. 2011. B.Sc. (Civil & Environmental Engineering) Comparative research of the energy balance of a bare roof and a green roof.
7. Swanton, A. 2010. B.Sc. (Env. Sci.) The influence of vegetation on the temperature of Vancouver's neighborhoods.
8. Sugar, L. 2008. B.Sc. (Physics) A method for estimating sensible heat flux of highly heterogeneous urban areas using a large aperture scintillometer
9. Tauvette, N. 2004. B.Sc. (Env. Sci.) Calculation of the amount of carbon sequestered by living trees in the City of London, Ontario
10. Aldred, D. 2003 B.Sc. Representation of urban canyon temperature.
11. Szpirglas, J. 2002. B.Sc. A validation and performance assessment of the Surface Heat Island Model.
12. Anderson, G. 2000. B.Sc. On using exposed fine wire thermocouples to measure air temperature above a surface.
13. Kronby, D.M. 1998 B.Sc. Estimation of complete true surface temperatures for selected building types.
14. Kapp, C.L. 1999. B.Sc. Examining the relationship between complete and off-nadir temperatures.

## Research Assistants:

2016	Bourke, M.	Workstudy student
2015-16	Hannon, M.	Workstudy student, summer research student
2015	Fajardo, B.	Workstudy student
2014	Kim, M.	Workstudy student
2014	Lee, M.	Workstudy student
2014	Wiechers, T.	Workstudy student
2013	Kim, M.	Workstudy student
2013	Lee, M.	Workstudy student
2013	Kurukulaarachchi, D.	NSERC USRA summer research student
2013	Wrona, E.	NSERC USRA Summer research student
2012	Kurukulaarachchi, D.	NSERC USRA summer research student

2010-11	Vezer, M.	EPiCC research associate
2010	Walker, M.	EPiCC summer research student
2009	Porter, K.	NSERC research associate
2008	Sugar, L.	NSERC USRA summer research student
2007	Sugar, L.	NSERC USRA summer research student
2006	Habyarimana, S.	Workstudy student
2005	Longstaffe, M.	Research Assistant
2005	Jennifer Stenson	Workstudy student
2004	VanDorp, R.	NSERC USRA Summer Research Assistant
2003	Aldred, D.	NSERC USRA Summer Research Assistant
2003	Jones, C	Summer Research Assistant
2003	Fowler, A.	Workstudy student
2003	Cook, S.	Workstudy student
2001	Szpirglas, J.	NSERC USRA Summer Research Assistant
2000	Kapp, C.L.	Summer Research Assistant
2000	Rhodenizer, K.	HRDC Summer Career Placement Program
1999	Kapp, C.L.	NSERC USRA Summer Research Scholarship
1999	Summers, L.	City of London Energy and Air Emissions Task Force Assistant
1999	Froelich, N.	HRDC Summer Career Placement Program
1998	Kapp, C.L.	HRDC Summer Career Placement Program
1997	Bauer, B.	Ph.D. student, Centre for Environmental Research Leipzig, Germany (1 term supervision, required for German degree)
1997	Nitarski, W.	HRDC Summer Career Placement Program
1996-99	Various	Western Work Study Program: 1 per year

#### *Teaching Development*

1996	Educational Development Office, Teaching Seminar, May 1996.
1994	Instructional Skills Workshop: University of British Columbia

#### *Research Software*

SUM Sun sensor surface view model for urban surfaces. (See Soux et al. 2004, Voogt 2008).

#### *Teaching Software*

1997-99	SHIM (Surface Heat Island Model) development of an EXCEL based model from the Johnson <i>et al.</i> (1991) model.
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## PUBLICATIONS

### *Career Summary*

Chapters in edited books:	4
Papers in refereed journals:	47
Papers in refereed conference proceedings:	4
Other refereed publications	3
Technical reports:	5
Abstracts and Presentations at Professional Meetings:	113 (23 invited)

<#> are citation counts from Google Scholar where available

### **Books**

#### Submitted:

Oke, T.R., G. Mills, A. Christen, J.A. Voogt. *Urban Climates*. Cambridge University Press. Submitted Aug.

#### *Chapters in Edited Books*

##### *Accepted:*

Voogt, J.A. Urban Climate. In: Richardson, D., N. Castree, M.F. Goodchild, A.L. Kobayashi, W. Liu, R. Marston, *The International Encyclopedia of Geography*, John Wiley & Sons and American Association of Geographers (invited; accepted with revisions).

##### *Published:*

Voogt, J.A. 2014: Urban Heat Islands and Effects. *Encyclopedia of Natural Resources, Volume 2*. CRC Press, Taylor and Francis, Group (invited).

Voogt, J.A. 2010: Urban Climate. In: *Encyclopedia of Urban Studies* (Ed. Ray Hutchison), SAGE Publications: Thousand Oaks, CA pp 848-853 (invited).

Grimmond, C.S.B., M. Best, J. Barlow, A. J. Arnfield, J.-J. Baik, A. Baklanov, S. Belcher, M. Bruse, I. Calmet, F. Chen, P. Clark, A. Dandou, E. Erell, K. Fortuniak, R. Hamdi, M. Kanda, T. Kawai, H. Kondo, S. Krayenhoff, S. H. Lee, S.-B. Limor, A. Martilli, V. Masson, S. Miao, G. Mills, R. Moriwaki, K. Oleson, A. Porson, U. Sievers, M. Tombrou, J. Voogt, and T. Williamson 2009: Urban Surface Energy Balance Models: Model Characteristics and Methodology for a Comparison Study. In: A. Baklanov et al. (eds.), *Meteorological and Air Quality Models for Urban Areas* Springer-Verlag Berlin Heidelberg pp 97-123. DOI 10.1007/978-3-642-00298-4\_11 <18>

Voogt, J.A. 2000: Urban Heat Island. In: *Encyclopedia of Global Environmental Change* (Ed. T. Munn), Vol. 3: *Causes and Consequences of Global Environmental Change*. (Ed. I. Douglas). p. 660-666. <142>

#### *Papers in Refereed Journals*

Dyce, D.R. and J.A. Voogt, 2017: The influence of tree crowns on urban thermal effective anisotropy. Accepted: *Urban Climate* (invited paper, special issue from ICUC-9).

Yang, J., M.S. Wong, M. Menenti, J. Nichol, J. Voogt, E. Scott Krayenhoff, P.W. Chan, 2016: Development of an improved urban emissivity model based on sky view factor for retrieving effective emissivity and surface temperature over urban areas. *ISPRS J. of Photogram. Rem. Sens.* 122, 30-40.

- Huang F., W. Zhan, J. Voogt, L. Hu, Z. Wang, W. Ju, J. Quan, 2016: Temporal upscaling of surface urban heat island by incorporating an annual temperature cycle model: A tale of two Cities. *Remote Sensing of Environment*, **186**, 1–12.
- Hu L, A. Monaghan, J.A. Voogt, M. Barlage, 2016: A first satellite-based observational assessment of urban thermal anisotropy. *Remote Sensing of Environment*, **181**, 111-121.
- Sims, A.W., Robinson, C.E., Smart, C.C., Voogt, J.A., Hay, G.J., Lundholm, J.T., Powers B. and O’Carroll, D.M., 2016. Retention Performance of Green Roofs in Three Different Climate Regions, *Journal of Hydrolog*, **542**, 115-124. DOI: 10.1016/j.jhydrol.2016.08.055
- Srivastava, A.K., J. Voogt, S. R. Kshirsagar and K. Srivastava, 2016: Heat islands over Mumbai as revealed by autorecorded thermograph data. *J. Earth Syst. Sci.* **125(1)**, 85–93. <1>
- Krayenhoff, E.S. and J.A. Voogt, 2016: Daytime thermal anisotropy of urban neighbourhoods: Morphological causation. *Remote Sensing*, **8(2)**, **108**. <1>
- Adderley C., A. Christen, J.A. Voogt, 2015: The effect of radiometer placement and view on inferred directional and hemispheric radiometric temperatures of an urban canopy. *Atmospheric Measurement Techniques*, **8**, 2699-2714. <2>
- Yang, J., Z. Wang, F. Chen, S. Miao, M Tewari, J.A. Voogt, S. Myint, 2015: Enhancing hydrologic modeling in the coupled Weather Research and Forecasting-Urban modeling system. *Boundary-Layer Meteorology*, **155(1)**, 87-109. <9>
- Quan, J., Y. Chen, W. Zhan, J. Wang, J. Voogt, J. Li, 2014: A hybrid method combining neighborhood information from satellite data with modeled diurnal temperature cycles over consecutive days. *Remote Sensing of Environment*, **155**, 257-274. <2>
- Quan, J., Y. Chen, W. Zhan, J. Wang, J. Voogt, M. Wang, 2014: Multi-temporal trajectory of the urban heat island centroid in Beijing, china based on a Gaussian volume. *Remote Sensing of Environment*, **149**, 33-46. <11>
- Zhan, W., J. Zhou, W. Ju, M. Li, I. Sandholt, J.Voogt, C. Yu, 2014: Remotely sensed soil temperatures beneath snow-free skin-surface using thermal observations from tandem polar-orbiting satellites: An analytical three-time-scale model. *Remote Sensing of Environment*, **143**, 1-14. <9>
- Zhan, W., Y. Chen, J. Zhou, J. Wang, W. Liu, J. Voogt, X. Zhu, J. Quan, J. Li, 2013: Disaggregation of remotely sensed land surface temperature: Literature survey, taxonomy, issues, and caveats. *Remote Sensing of Environment*, **131**, 119-139. <48>
- Zhan, W., Y. Chen, J. Voogt, J. Zhou, J. Wang, W. Liu, W. Mad, 2012: Interpolating diurnal surface temperatures of an urban facet using sporadic thermal observations. *Building and Environment* **57**, 239-252. <10>
- Chen, F., R. Bornstein, S. Grimmond, J. Li, X. Liang, A. Martilli, S. Miao, J. Voogt, Y. Wang, 2012: Research priorities in observing and modeling urban weather and climate. *Bulletin of the American Meteorological Society* **93(11)**, 1725-1728. <20>
- Hénon, A., P.G. Mestayer, J-P. Lagouarde, J.A. Voogt, 2012a: An urban neighborhood temperature and energy study from the CAPITOU experiment with the SOLENE model. Part 1: analysis of flux contributions. *Theoretical and Applied Climatology* **110(1-2)**, 177-196. <15>
- Hénon, A., P.G. Mestayer, J-P. Lagouarde, J.A. Voogt, 2012b: An urban neighborhood temperature and energy study from the CAPITOU experiment with the SOLENE model. Part 2: influence of building surface heterogeneities. *Theoretical and Applied Climatology* **110(1-2)**, 197-208. <15>
- Zhan, W., Y. Chen, J.A. Voogt, J. Zhou, J. Wang, W. Ma , W. Liu, 2012: Assessment of thermal anisotropy on remote estimation of urban thermal inertia. *Remote Sensing of Environment* **123**, 12-24. <7>

- Salmond, J. A., M. Roth, T. R. Oke, A. Christen, and J. A. Voogt, 2012: Can surface-cover tiles be summed to give neighborhood fluxes in cities? *Journal of Applied Meteorology and Climatology* **51(1)**, 133-149. <9>
- Lagouarde, J.-P., A. Hénon, M. Irvine, J. Voogt, G. Pigeon, P. Moreau, V. Masson, P. Mestayer, 2012: Experimental characterization and modelling of the nighttime directional anisotropy of thermal infrared measurements over an urban area: case study of Toulouse (France). *Remote Sensing of Environment* **117**, 19-33. <17>
- Christen, A., N.C. Coops, B.R. Crawford, R. Kellett, K.N. Liss, I. Olchovski, T.R. Tooke, M. van der Laan, J.A. Voogt, 2011: Validation of modeled carbon-dioxide emissions from an urban neighborhood with direct eddy-covariance measurements. *Atmospheric Environment* **45(33)**, 6057-6069. <48>
- Tooke, T.R., N.C. Coops, J.A. Voogt, M.J. Meitner, 2011: Tree structure influences on rooftop-received solar radiation. *Landscape and Urban Planning* **102**, 73– 81. <23>
- Hénon, A. Mestayer, P.G., D. Groleau, J. Voogt, 2011: High resolution thermo-radiative modeling of an urban fragment in Marseilles city center during the UBL-ESCOMPTE campaign. *Building and Environment* **46**, 1747-1764. <26>
- Grimmond, C.S.B., M. Blackett, M.J. Best, and 33 others (including Krayenhoff and Voogt), 2011: Initial results from Phase 2 of the International Urban Energy Balance Model Comparison. *International Journal of Climatology* **31**, 244–272. <155>
- Grimmond, C.S.B., M. Blackett, M. Best and J. Barlow, and J.-J. Baik, S. Belcher, S.I. Bohnenstengel, I. Calmet, F. Chen, A. Dandou, K. Fortuniak, M.L. Gouvea, R. Hamdi, M. Hendry, H. Kondo, S. Krayenhoff, S.-H. Lee, T. Loridan, A. Martilli, V. Masson, S. Miao, K. Oleson, G. Pigeon, A. Porson, F. Salamanca, L. Shashua-Bar, G.-J. Steeneveld, M. Tombrou, J. Voogt, N. Zhangm 2010: The International Urban Energy Balance Models Comparison Project: First results from Phase 1. *Journal of Applied Meteorology and Climatology* **49**, 1268-1292. <202>
- Krayenhoff, E.S. and J.A. Voogt, 2010: Impacts of urban albedo increase on local air temperature at daily through annual time scales: Model results and synthesis of previous work. *Journal of Applied Meteorology and Climatology* **49**, 1634-1648. <30>
- Lagouarde, J.-P., A. Hénon, B. Kurz, P. Moreau, M. Irvine, J. A. Voogt, P. Mestayer, 2010: Modelling daytime thermal infrared directional anisotropy over Toulouse city centre. *Remote Sensing of Environment* **114(1)**, 87-105. <40>
- Goodwin, N. N. Coops, R. Tooke, A. Christen, J.A. Voogt, 2009: Characterising urban surface cover and structure with airborne LiDAR technology. *Canadian Journal of Remote Sensing* **35(3)**, 297-309. <42>
- Tooke, T.R., N.C. Coops, N.R. Goodwin, J.A. Voogt, 2009: Extracting urban vegetation characteristics using spectral mixture analysis and decision tree classifications. *Remote Sensing of Environment* **113 (2)**, 398-407. <133>
- Pigeon, G. M.A. Moscicki, J.A. Voogt, V. Masson, 2008: Simulation of fall and winter surface energy balance over a dense urban area using the TEB scheme. *Meteorology and Atmospheric Physics* **102**, 159–171. DOI 10.1007/s00703-008-0320-9. <60>
- Masson, V., L. Gomes, G. Pigeon, C. Liousse, V. Pont, J-P. Lagouarde, J. Voogt, J. Salmond, T.R. Oke, J. Hidalgo, D. Legain, O. Garrouste, C. Lac, O. Connan, X. Briottet, S. Lachérade, P. Tulet, 2008: The Canopy and Aerosol Particle Interactions in TOulouse Urban Layer (CAPITOU) experiment. *Meteorology and Atmospheric Physics* **102**, 135–157. <95>
- Voogt, J.A. 2008: Assessment of an urban sensor view model for urban thermal anisotropy. *Remote Sensing of Environment* **112**, 482–495. <26>



- Lemonsu, A., S. Belair, J. Mailhot, M. Benjamin, F. Chagnon, G. Morneau, B. Harvey, J. Voogt, and M. Jean, 2008: Overview and first results of the Montreal Urban Snow Experiment 2005. *Journal of Applied Meteorology and Climatology* **47(1)**, 59-75. <14>
- Krayenhoff, E.S. and J.A. Voogt, 2007: A micro-scale 3-D urban energy balance model for studying surface temperatures. *Boundary-Layer Meteorology* **123**: 433–461. <88>
- Roberts, S.M., T.R. Oke, C.S.B. Grimmond, and J.A. Voogt, 2006: Comparison of four methods to estimate urban heat storage. *Journal of Applied Meteorology* **45(12)**: 1766-1781. <57>
- Rotach, M. W., R. Vogt, C. and 18 others including J. A. Voogt, 2005: BUBBLE – an Urban Boundary Layer Meteorology Project. *Theor. Appl. Climatol.* **81**, 231–261. <266>
- Mestayer, P., P. Durand, P. and 33 others including J. A. Voogt, 2005: The Urban Boundary Layer Field Campaign in Marseille (UBL/CLU-ESCOMPTE): Set-up and first results. *Boundary-Layer Meteorology*, **114(2)**, 315-365. <132>
- Lagouarde, J-P., P. Moreau, M. Irvine, J-M. Bonnefond, J.A. Voogt, and F. Sollicec, 2004: Airborne experimental measurements of the angular variations in surface temperature over urban areas: Case study of Marseille (France). *Remote Sensing of Environment*. **93 (4)**, 443-462. <81>
- Soux, C.A., Voogt, J.A. and T.R. Oke, 2004: A model to calculate what a remote sensor ‘sees’ of an urban surface. *Boundary Layer Meteorology*, **111**, 109–132. <71>
- Voogt, J.A. and T.R. Oke, 2003: Thermal remote sensing of urban areas. *Remote Sensing of Environment*, special issue on Urban Areas, **86(3)**, 370-384. <1021>
- Voogt, J.A., 2000: Image representations of complete urban surface temperatures. *Geocarto International*, **15**, 19-30. <19>
- Voogt, J.A. and C.S.B. Grimmond, 2000: Modelling surface sensible heat flux using surface radiative temperatures in a simple urban area. *Journal of Applied Meteorology*, **39**, 1679-1699. <153>
- Voogt, J.A. and T.R. Oke, 1998: Radiometric temperatures of urban canyon walls obtained from vehicle traverses. *Theoretical and Applied Climatology*, **60**, 199-217. <33>
- Voogt, J.A. and T.R. Oke, 1998: Effects of urban surface geometry on remotely-sensed surface temperature. *International Journal of Remote Sensing*, **19**, 895-920. <172>
- Voogt, J.A. and T.R. Oke, 1997: Complete urban surface temperatures. *Journal of Applied Meteorology*, **36**, 1117-1132. <250>
- Voogt, J.A. and T.R. Oke, 1991: Validation of an urban canyon radiation model for nocturnal long-wave radiative fluxes. *Boundary-Layer Meteorology*, **54**, 347-361. <38>
- Voogt, J.A. and D.G. Steyn, 1991: An automated radiometer traversing system for use in a model urban canyon. *Journal of Atmospheric and Oceanic Technology*, **8**, 531-540. <2>
- Johnson, G.T., T.R. Oke, T.J. Lyons, D.G. Steyn, I.D. Watson, and J.A. Voogt, 1991: Simulation of surface urban heat islands under 'ideal' conditions at night. Part 1: Theory and tests against field data. *Boundary-Layer Meteorology*, **56**, 275-294. <459>

#### Technical Reports

- Dyce, D.R. and J.A. Voogt 2014. Characterizing the urban heat island effect in Middlesex-London. Contract report to Health Canada and Middlesex-London Health Unit, 87 pp. Submitted Mar 25, 2014.
- Environmental Protection Agency (United States) 2008 “Urban Heat Island Basics” in *Reducing Urban Heat Islands: Compendium of Strategies* Climate Protection Partnerships Division (under contract to Perrin Quarles Assoc.).

- Grimmond, S. M. Best, J. Barlow, A. J. Arnfield, J.J. Baik, A. Baklanov, S. Belcher, M. Bruse, I. Calmet, F. Chen, P. Clark, A. Dandou, E. Erell, K. Fortuniak, R. Hamdi, M. Kanda, T. Kawai, H. Kondo, S. Krayenhoff, S.H. Lee, S.B. Limor, A. Martilli, V. Masson, S. Miao, G. Mills, R. Moriwaki, K. Oleson, A. Porson, U. Sievers, M. Tombrou, J. Voogt, T. Williamson. Urban Surface Energy Balance Models: Model Characteristics and Methodology for a Comparison Study. *In: Baklanov, A., A. Mahura, S. Grimmond. 2008. Urbanization of Meteorological and Air Quality Models: Enhancing Mesoscale Meteorological Modelling Capabilities for Air Pollution and Dispersion Applications. COST Action 728. European Co-operation in the field of Scientific and Technical Research. 15 May 2008.*
- Voogt, J.A. and E.S. Krayenhoff. 2005. Simulation of Near-Surface Air Temperature Response to Roof Albedo Change in Chicago, IL. Report to the Roofing Contractors Association of America, Chicago IL.
- Voogt, J.A. and Summers, L. 2000. Air Emissions and Energy Use in the City of London. Report of the London Energy and Air Emissions Reduction Strategy Task Force. Dec. 1999. 74 pp.

#### *Other Refereed Publications*

- Voogt, J.A. Focus on a Special Topic: Radiation and Energy Budgets at Earth's Surface. In: Ahrens, C.D., P.L. Jackson and C.E.J. Jackson 2012. *Meteorology Today*, 1<sup>st</sup> Canadian Edition, Nelson Education, pp 56-57.
- Voogt, J.A. 2004. Urban Heat Islands: Hotter Cities. ActionBioscience.org. American Institute of Biological Sciences. (invited) <http://www.actionbioscience.org/environment/voogt.html> <55>
- Voogt, J.A. 2001. "Geographers at Work Series" in: Strahler, A. H. 2001. *Physical Geography: Science and Systems of the Human Environment*, 2<sup>nd</sup> Edition, 768 pp. (Invited).

#### *Invited Presentations*

- Voogt, J.A. 2016: Measuring the urban surface temperature, Meteorology Speaker Series, University of Hamburg, Apr. 26, 2016.
- Voogt, J.A. 2015: Respondent: Urban Anthropogenic Heat Flux: Impacts on the Urban Heat Island, NSF Urban Climate Institute, University of Georgia, July 6-7, 2015, Athens GA.
- Voogt, J.A., D. O'Carroll, C. Robinson, J. Lundholm, B. Sleep, C. Smart, Maja Staniec, D. Kurukulaarachchi, A. Sims, M. Sia, G. Perelli, E. Wrona, T. Wiechers, P. Breach 2015 Green roofs in Canadian Cities, University of Reading, Dept. of Meteorology, Urban Climate Group presentation, June 11, 2015.
- Voogt, J.A., E.S. Krayenhoff, D.R. Dyce 2015. Linking the 3D state of the urban surface to the 2D remote sensing view. EarthTemp 2015: Urban Surface Temperatures, University of Reading, Reading UK June 8-10, 2015.
- Voogt, J.A. 2014: Discussant: Are climate models ready for the urban scale? NSF Urban Climate Institute, Georgia Institute of Technology, July 9-10, 2014, Atlanta GA.
- Dyce, D.R. and J.A. Voogt 2014. Characterizing the urban heat island effect in Middlesex-London. Climate Change and Health Vulnerability in Middlesex-London, Workshop hosted by Middlesex-London Health Unit, March 27, 2014, London, Ontario.
- Voogt, J.A. 2013. Urban Observations: Insights from the Environmental Prediction in Canadian Cities (EPiCC) Project. Argonne National Labs, IL.
- Voogt, J.A. and Klein, P. 2013. Science and Technology: Urban Meteorology: Forecasting, Monitoring and Meeting Users' Needs. Special Panel Presentation, American Association for Geographers Annual Conference, Los Angeles, CA. Apr. 2013.
- Voogt, J.A. 2011. Remote sensing of urban surface temperatures and the surface urban heat island. International Workshop on Urban Weather and Climate: Observation and Modeling 12-15 July 2011, Beijing, China.

- Voogt, J.A. 2010. Application of Thermography for the Study of Urban Environments. InfraCanada Conference (Central Canada), FLIR Systems Canada, Oakville ON Jun 10, 2010.
- Voogt, J.A. 2009. How Thermography is Used to Help Study Urban Climates. InfraCanada Conference (Central Canada), FLIR Systems Canada, Oakville ON Jun 10-12, 2009.
- Voogt, J.A. 2009. Impact of the Urban Surface on the Weather a City Experiences. 3<sup>rd</sup> Annual Cross-disciplinary Luncheon “Society's Impact on the Natural Ecosystem”, The Ivey Centre for Building Sustainable Value and Centre for Environment & Sustainability, University of Western Ontario.
- Voogt, J.A. 2008. Urban Heat Island - Impact on Health and Climate. Where’s the shade? Community Forum. Sept. 30, 2008 London ON.
- Voogt, J.A. 2008. Remote Sensing of Urban Surface Temperatures. Second Workshop on Earth Observation in Urban Planning and Management, Department of Land Surveying and Geo-Informatics, The Hong Kong Polytechnic University (PolyU) May 20-21, 2008. Hong Kong.
- Voogt, J.A. 2007. How Researchers Measure Heat Islands. US EPA (Environmental Protection Agency) Conference Call (telephone –based conference). invited presentation (July 31, 2007). See: <http://www.epa.gov/heatisland/resources/webcasts.htm>
- Voogt, J.A. and G. Mills. 2006. High Latitude Urban Climates: A Conceptual Illustrated Overview. Plenary Presentation, 6th International Conference on Urban Climate, Göteborg Sweden, June 12-16, 2006.
- Voogt, J.A., I.G. McKendry and G. Mills. 2006. T.R. Oke: Contributions to Applied Urban Climatology and Meteorology. Invited session: 6th International Conference on Urban Climate, Göteborg Sweden, June 12-16, 2006.
- Voogt, J.A. 2006. Urban Surface Temperatures: Observations and Modelling. Cool Pavements: Sustainable Materials for the Urban Environment Conference. Apr. 24. Arizona State University, Tempe Arizona.
- Voogt, J.A. 2005. Urban Surface Temperatures and Remote Sensing. UWERN Universities Weather Research Network: Urban Climatology and its Applications. Pembroke College, Cambridge University, UK. 7/8 July 2005.
- Voogt, J.A. 2005. Urban Surface Temperatures and the Urban Heat Island. Department of Civil and Environmental Engineering, Seminar Series. Mar. 22, 2005.
- Voogt, J.A. 2002. Thermal Remote Sensing of Urban Surface Climates. National University of Singapore: Department of Geography Colloquia, Apr 16. 2002.
- Voogt, J.A. and T.R. Oke. 2002. Urban Heat Islands and Turbulent Heat Fluxes of Cities. ERCOFTAC (European Research Community on Flow, Turbulence and Combustion) Seminar, University of Basel, Basel, Switzerland, June 26 2002
- Voogt, J.A. and T.R. Oke. 2002. Heat Islands and Turbulent Heat Fluxes in the Urban Boundary Layer. ERCOFTAC (European Research Community on Flow, Turbulence and Combustion) Seminar, Leonhard Euler Centre Visitors Programme: 2002 Visitor. IAC ETH-Zürich, Switzerland, July 4, 2002.
- Voogt, J.A. “Thermal Remote Sensing of Urban Surface Temperatures.” Indiana University, Dept. of Geography, Bloomington IN, Apr. 25 1997.

*Refereed Conference Proceedings*

- Allen, M., J.A. Voogt, A. Christen, 2017. Towards a continuous climatological assessment of urban surface heat islands. Joint Urban Remote Sensing Event (JURSE 2017), Dubai UAE, Mar 6-8, 2017.
- Krayenhoff, E.S. and J.A. Voogt, 2017. Morphological control on urban thermal anisotropy. Joint Urban Remote Sensing Event (JURSE 2017), Dubai UAE, Mar 6-8, 2017.

- Allen, M., J.A. Voogt, A. Christen, 2017. A climatology of urban surface heat islands derived from hemispherical radiometric surface temperatures. 13<sup>th</sup> Symposium on the Urban Environment, American Meteorological Society, Seattle WA, 23-26 January 2017.
- Grimmond; C.S.B., M. Roth; T.R. Oke; Y.C. Au; M. Best; R. Betts; G. Carmichael; H. Cleugh; W. Dabberdt; R. Emmanuel; E. Freitas; K. Fortuniak; S. Hanna; P. Klein; L.S. Kalkstein; C.H. Liu; A. Nickson; D. Pearlmutter; D. Sailor; J. Voogt. 2010: Climate and more sustainable cities: Climate information for improved planning and management of cities (Producers/Capabilities perspective) *Procedia Environmental Sciences*, **1**, 247-274. <95>
- Voogt, J.A. 2000. Image representations of complete surface temperatures. In: *Biometeorology and Urban Climatology at the Turn of the Millenium*. (Editors: de Dear et al.) pp. 517-522.
- Voogt, J.A. and C.S.B. Grimmond, 2000. Bulk heat transfer modelling of urban surface sensible heat flux. In: *Biometeorology and Urban Climatology at the Turn of the Millenium*. (Editors: de Dear et al.) pp. 511-516.
- Voogt, J.A. and T.R. Oke, 2000. Multi-temporal remote sensing of an urban heat island. In: *Biometeorology and Urban Climatology at the Turn of the Millenium*. (Editors: de Dear et al.) pp. 505-510.

#### *Conference Presentations with Abstracts*

- Allen, M., J.A. Voogt, A. Christen, 2016. GC53H-01 A method to assess urban surface heat islands using hemispherical radiometric temperatures. American Geophysical Union Fall Meeting, San Francisco, Dec. 12-16, 2016.
- Dyce, D.R. & JA Voogt 2015. The influence of tree crowns on urban thermal effective anisotropy. 9<sup>th</sup> International Conference on Urban Climate, July 20-24 Toulouse, France.
- Kurukulaarachchi, D., J.A. Voogt, M. Staniec, C.C. Smart, D. O'Carroll, E. Wrona, M. Sia, C. Robinson 2015. Measurements of the green roof energy balance in three Canadian Cities, 9<sup>th</sup> International Conference on Urban Climate (poster), July 20-24 Toulouse, France.
- Christen, A., E.S. Krayenhoff, A. Martilli, T.R. Oke, J-L Santiago, J.A. Voogt 2014. Effects of urban trees on drag and turbulence in cities. 48<sup>th</sup> Canadian Meteorological and Oceanographic Society Congress – Rimouski QC June 1-5, 2014.
- Kurukulaarachchi, D. J. Voogt 2014. The daytime evaporative cooling performance of green roofs in London and Calgary. 11<sup>th</sup> Annual Earth Day Colloquium, Western University, London ON, Apr 10, 2014.
- Staniec, M., D. O'Carroll, C. Robinson, J. Voogt 2014. Daytime and night time surface temperatures of green and standard roof. 11<sup>th</sup> Annual Earth Day Colloquium, Western University, London ON, Apr 10, 2014.
- Wrona, E. and J. Voogt 2014. Thermal behavior of an experimental green roof in London ON Canada. 11<sup>th</sup> Annual Earth Day Colloquium, Western University, London ON, Apr 10, 2014.
- Dyce, D.R. and J.A. Voogt 2014. Effects of vegetation on urban thermal anisotropy. 11<sup>th</sup> Symposium on the Urban Environment, American Meteorological Society, Atlanta GA Feb 3-6, 2014.
- Voogt, J.A., D. Kurukulaarachchi, M. Staniec, P. Santana, C. Robinson. 2013. The green roof energy balance in two Canadian Cities. Annual Meeting of the American Association of Geographers, Los Angeles, CA. April 9-13, 2013.
- Breach, P.A., C.E. Robinson, J.A. Voogt, C.C. Smart, D.M. O'Carroll 2013. Linking evapotranspiration to stormwater reduction and attenuation in green roofs in Calgary, Alberta. American Geophysical Union, Fall Meeting 2013, abstract #H21J-1192.

- Dyce, D. and J.A. Voogt. 2012. Sensitivity of modeled urban thermal anisotropy to thermal admittance. 8<sup>th</sup> International Conference on Urban Climate ICUC8, Dublin IR, Aug 6-10 2012.
- Voogt, J.A. and E.S. Krayenhoff. 2012. A systematic evaluation of daytime thermal anisotropy for urban landscapes. 8th International Conference on Urban Climate ICUC8, Dublin IR, Aug 6-10 2012.
- Adderley, C., A. Christen, J. A. Voogt, F. Meier 2012. The effect of preferential view direction on measured urban surface temperature. 8th International Conference on Urban Climate ICUC8, Dublin IR, Aug 6-10 2012.
- Voogt, J.A., E.S. Krayenoff, I. Lee 2011. Urban surface temperatures and urban form. 18<sup>th</sup> International Seminar on Urban Form: ISUF2011, Concordia University Aug 26-29, 2011 Montréal QC.
- Christen A., O. Bergeron, B. Crawford, T.R. Oke, M. van der Laan, I. Strachan, J.A. Voogt 2011. Tower-based measurements of carbon emissions in four Canadian residential neighborhoods reveal linkages between urban metabolism and form. 18<sup>th</sup> International Seminar on Urban Form: ISUF2011, Concordia University Aug 26-29, 2011 Montréal QC.
- Christen, A., J. Kleissl, F. Meier, R. Vogt, J. Voogt 2011. Mapping coherent structures responsible for heat exchange between land-surfaces and atmosphere using time-sequential thermography. Coherent Flow Structures in Geophysical Flows at Earth's Surface, Simon Fraser University, Burnaby BC, Aug. 3-5, 2011.
- Christen A., T.R. Oke, J.A. Voogt 2011. Seasonal controls on urban-rural differences of the surface radiation budget. CMOS Congress 2011, Victoria, Canada, June 5-9, 2011.
- Krayenhoff, E.S. and J.A. Voogt 2010. Impacts of urban albedo increase on local air temperature at daily through annual time scales: Model results and synthesis of previous work. 9<sup>th</sup> Symposium on the Urban Environment, American Meteorological Society, 2-6 Aug, 2010 Keystone CO.
- Nanni, B.E. and J.A. Voogt 2010. Source area scale variations in urban snow cover and its impact on the radiation budget. 9<sup>th</sup> Symposium on the Urban Environment, American Meteorological Society, 2-6 Aug, 2010 Keystone CO.
- Christen, A. and J.A. Voogt 2010. Inferring turbulent exchange processes in an urban street canyon from high-frequency thermography. 9<sup>th</sup> Symposium on the Urban Environment, American Meteorological Society, 2-6 Aug, 2010 Keystone CO.
- Christen, A., N. Coops, B. Crawford, R. Kellett, K. Liss, T. Oke, I. Olchovski, R. Tooke, M. van der Laan, J.A. Voogt. 2010. Comparing an urban metabolism model to long-term CO<sub>2</sub> eddy-covariance measurements. 9<sup>th</sup> Symposium on the Urban Environment, American Meteorological Society, 2-6 Aug, 2010 Keystone CO.
- Voogt, J.A., T.R. Oke, O. Bergeron, S. Leroyer, S. Belair, M. Benjamin, A. Christen, N. Coops, J. Mailhot, I. McKendry, I. Strachan, J. Wang. 2010. The Environmental Prediction in Canadian Cities (EPiCC) Network. 44<sup>th</sup> CMOS Congress, Canadian Meteorological and Oceanographic Society 31 May – 4 Jun. Ottawa ON.
- Christen, A., B. Crawford, C.S. Grimmond, J.A. Voogt, T.R. Oke. 2010. Year-long urban-rural differences of the surface radiation and energy balance observed in and near Vancouver, BC. 44<sup>th</sup> CMOS Congress, Canadian Meteorological and Oceanographic Society 31 May – 4 Jun. Ottawa ON.
- Voogt, J.A. and A. Christen. 2009. Assessment of urban soil moisture using thermal imaging in a residential street canyon. 7<sup>th</sup> International Conference on Urban Climate, Yokohama Japan, Jun 29-Jul 3, 2009.
- Voogt, J.A., T. R. Oke, O. Bergeron, S. Leroyer, B. Crawford, E. Christensen, B. Nanni, T. R. Tooke, D. van der Kamp, F. Chagnon. 2009. The Environmental Prediction in Canadian Cities (EPiCC) network. 7<sup>th</sup> International Conference on Urban Climate, Yokohama Japan, Jun 29-Jul 3, 2009.
- Voogt, J.A., C. S. Grimmond, S. Krayenhoff, S. M. Roberts, M. Roth, J. A. Salmond, and H. P. Schmid. 2009. Urban climates and the urban surface: a review of T.R. Oke's contributions arising from conceptual

- representations of the urban surface. The Timothy R. Oke Symposium, American Meteorological Society, 12-15 Jan. 2009 Phoenix AZ.
- Voogt, J.A., T. R. Oke, O. Bergeron, N. R. Goodwin, S. Leroyer, B. R. Crawford, E. Christensen, B. E. Nanni, R. Tooke, D. van der Kamp, D. Aldred, S. Bélair, F. Chagnon, A. Christen, N. Coops, J. Mailhot, I. McKendry, I. B. Strachan, J. Wang, M. Benjamin, S. Grimmond, A. Lemonsu, and V. Masson 2009. The Environmental Prediction in Canadian Cities (EPiCC) network. 8<sup>th</sup> Symposium of the Urban Environment, American Meteorological Society, 12-15 Jan. 2009 Phoenix AZ.
- Christen, A. and J.A. Voogt. 2009. Linking atmospheric turbulence and surface temperature fluctuations in a street canyon. 7<sup>th</sup> International Conference on Urban Climate, Yokohama Japan, Jun 29-Jul 3, 2009.
- Christen, A. B. Crawford, N. R. Goodwin, R. Tooke, N. Coops, S. Grimmond, T. R. Oke, and J. A. Voogt 2009. The EPiCC Vancouver Experiment—how do urban vegetation characteristics and garden irrigation control the local-scale energy balance? 8<sup>th</sup> Symposium of the Urban Environment, American Meteorological Society, 12-15 Jan. 2009 Phoenix AZ.
- Crawford, B. A. Christen, T. R. Oke, J. A. Voogt, and S. Grimmond 2009. Observations of carbon dioxide fluxes in two suburban neighborhoods in Vancouver, Canada. 8<sup>th</sup> Symposium of the Urban Environment, American Meteorological Society, 12-15 Jan. 2009 Phoenix AZ.
- Grimmond, CSB, M Blackett, M Best, J-J Baik, S Belcher, SI Bohnenstengel, I Calmet, F Chen, A Dandou, K Fortuniak, M Gouvea, R Hamdi, M Hendry, H Kondo, S Krayenhoff, S-H Lee, T Loridan, A Martilli, V Masson, S Miao, K Oleson, G Pigeon, A Porson, F Salamanca, G-J Steeneveld, M Tombrou, J Voogt, N Zhang. The international urban energy balance comparison project: Initial results from phase 2. 7<sup>th</sup> International Conference on Urban Climate, Yokohama Japan, Jun 29-Jul 3, 2009.
- Oke, T.R., J.A. Salmond, M. Roth, A.N.V. Satyanarayana, J.A. Voogt, R. Vogt, A. Christen. 2009. Can canyon and rooftop fluxes be combined into neighbourhood fluxes? American Association of Geographers (AAG) 2009 Annual Meeting Apr 10-16 2009 Las Vegas, NV.
- Pigeon, G. M. Moscicki, J. A. Voogt, and V. Masson 2009. Simulation of fall and winter surface energy balance over a dense urban area using the TEB scheme. 8<sup>th</sup> Symposium of the Urban Environment, American Meteorological Society, 12-15 Jan. 2009 Phoenix AZ.
- Pigeon, G., M. A. Moscicki, J. A. Voogt, V. Masson. 2009. Simulation of fall and winter surface energy balance over a dense urban area using the TEB scheme. 7<sup>th</sup> International Conference on Urban Climate, Yokohama Japan, Jun 29-Jul 3, 2009.
- Porter, K. and J.A. Voogt. 2009 Multiscale assessment of urban emissivity. 7<sup>th</sup> International Conference on Urban Climate, Yokohama Japan, Jun 29-Jul 3, 2009.
- Roberts, S.M., J. A. Voogt and T. R. Oke 2009. Outdoor scale model experiment to evaluate the complete urban surface temperature. 8<sup>th</sup> Symposium of the Urban Environment, American Meteorological Society, 12-15 Jan. 2009 Phoenix AZ.
- Tooke, T.R., Coops, N.C., Voogt, J.A., 2009. Assessment of urban tree shade using fused LIDAR and high spatial resolution imagery. In Proceedings: 2009 Joint Urban Remote Sensing Event (JURSE), Shanghai, China, May 20-22.
- Wang, J., N. Coops, N. Goodwin, D. Aldred , R. Tooke, S. Arnold, J. Voogt, 2009. Information extraction from high resolution LiDAR and multispectral data for urban climate studies. Presented at the Second International Conference on Earth Observation for Global Changes (EOGC 2009), Chengdu, China, May 25-29, 2009.
- Oke, T.R., J.A. Voogt, S. Bélair, M. Benjamin, O. Bergeron, F. Chagnon, A. Christen, N. Coops, N. Goodwin, C. Grimmond, S. Leroyer, A. Leroux, A. Lemonsu, I. McKendry, J. Mailhot, V. Masson, B. Nanni, I. Strachan, R. Tooke, D. van der Kamp, J. Wang. 2008. Environmental Prediction in Canadian Cities. 5<sup>th</sup> Japanese-German Meeting on Urban Climate. 6-11 Oct. 2008, Freiburg Germany.

- Roberts, S., J.A. Voogt, T.R. Oke, J. Carlson, J. Golden, A. Brazel. 2008. A physical scale model to study urban surface temperatures and radiation. Canadian Meteorological and Oceanographic Society Conference, Kelowna BC, May 25 - 29, 2008.
- Voogt, J.A. and T. R. Oke, S. Bélair, M. Benjamin, A. Christen, N. Coops, S. Grimmond, A. Lemonsu, J. Mailhot, V. Masson, I. McKendry, and J. Wang. 2007. The Environmental Prediction in Canadian Cities (EPiCC) Network. 7<sup>th</sup> Symposium of the Urban Environment, American Meteorological Society, 9-13 Sep. 2007 San Diego CA.
- Krayenhoff, E.S. and J.A. Voogt 2007. A microscale three-dimensional urban energy balance model for studying surface temperatures. 7<sup>th</sup> Symposium of the Urban Environment, American Meteorological Society, 9-13 Sep. 2007 San Diego CA.
- Krayenhoff, E.S. and J.A. Voogt 2007. Combining sub-facet scale urban energy balance and sensor-view models to investigate the dependence of effective thermal anisotropy on city structure. 7<sup>th</sup> Symposium of the Urban Environment, American Meteorological Society, 9-13 Sep. 2007 San Diego CA.
- Moscicki, M. and J.A. Voogt 2007. A comparison of modeled and observed urban surface temperatures in Toulouse, France. 7<sup>th</sup> Symposium of the Urban Environment, American Meteorological Society, 9-13 Sep. 2007 San Diego CA.
- Voogt, J.A. and E.S. Krayenhoff. 2006. Measured and modelled urban thermal anisotropy. Preprints: 6<sup>th</sup> International Conference on Urban Climate, Göteborg Sweden, June 12-16, 2006. Published by: Department of Geosciences, Göteborg University. 553-556. ISBN-10: 91-631-9000-1, ISBN-13: 978-91-631-9000-1.
- Krayenhoff, E.S. and J.A. Voogt. 2006. Combining sub-facet scale urban energy balance and sensor-view models to investigate effective thermal anisotropy. Preprints: 6<sup>th</sup> International Conference on Urban Climate, Göteborg Sweden, June 12-16, 2006. Published by: Department of Geosciences, Göteborg University. 557 -560. ISBN-10: 91-631-9000-1, ISBN-13: 978-91-631-9000-1. (**Winner of best student presentation at the ICUC-6 Conference**).
- Krayenhoff, E.S. and J.A. Voogt. 2006. A micro-scale 3-D urban energy balance model for studying surface temperature. Preprints: 6<sup>th</sup> International Conference on Urban Climate, Göteborg Sweden, June 12-16, 2006. Published by: Department of Geosciences, Göteborg University. 308-311. ISBN-10: 91-631-9000-1, ISBN-13: 978-91-631-9000-1.
- Voogt, J.A. and T. R. Oke. 2005. Recent progress in urban meteorology in Canada. Canadian Meteorological and Oceanographic Society, 39<sup>th</sup> Congress, May 31-June 3 2005 Richmond BC, Canada.
- Voogt, J.A. and Krayenhoff, E.S. 2005. Modeling urban thermal anisotropy. 5<sup>th</sup> International Symposium on Remote Sensing of Urban Areas (URS 2005), March 14 - 16 2005, Tempe, AZ, USA.
- Voogt, J.A. and M. Moscicki 2005. Canopy-layer surface temperature monitoring for CAPITOUL. CAPITOUL workshop, Toulouse Nov 28-29, 2005.
- Cai, X., J. Salmond, J.A. Voogt 2005. Building thermals and turbulent structure in a street canyon. Royal Meteorological Society Conference, 11th – 16th September, 2005 University of Exeter, UK.
- Krayenhoff, E.S. and Voogt, J. A. 2005. Development of a micro-scale 3-D urban energy balance model and its application to the study of intra-facet temperature distributions. Canadian Meteorological and Oceanographic Society, 39<sup>th</sup> Congress, May 31-June 3 2005 Richmond BC, Canada.
- Voogt, J.A. 2004. Application of a 3-D urban surface-sensor sun model to estimate urban thermal anisotropy for a range of urban geometries. 5<sup>th</sup> Symposium of the Urban Environment, American Meteorological Society, 23-26 Aug. 2004 Vancouver, BC, Canada.

- Cai, X.M., E. Hall, J. A. Salmond, and J.A. Voogt 2004. Effects of building thermals on turbulent structure in a street canyon. 5<sup>th</sup> Symposium of the Urban Environment, American Meteorological Society, 23-26 Aug. 2004 Vancouver, BC, Canada.
- Krayenhoff, E.S. and Voogt, J.A. 2004. Sensitivity testing of an urban surface scheme coupled to a 1-D boundary layer model. 5<sup>th</sup> Symposium of the Urban Environment, American Meteorological Society, 23-26 Aug. 2004 Vancouver, BC, Canada.
- Masson, V., G. Pigeon, P. Durand, L. Gomes, J. Salmond, J.-P. Lagouarde, J. Voogt, T. Oke, C. Lac, C. Liousse, and D.Maro. 2004. The canopy and aerosol particles interaction in Toulouse urban layer (CAPITOU) experiment: First Results. 5<sup>th</sup> Symposium of the Urban Environment, American Meteorological Society, 23-26 Aug. 2004 Vancouver, BC, Canada.
- Voogt, J.A. and Soux, C.A. 2003. Modification and testing of a 3-D urban surface-sensor-sun model to estimate urban thermal anisotropy. Fifth International Conference on Urban Climate, 1-5 September 2003, Lodz, Poland.
- Voogt, J.A. and Szpirglas, J. 2003. A validation and performance assessment of the surface heat island model. Fifth International Conference on Urban Climate, 1-5 September 2003, Lodz, Poland.
- Lagouarde J-P., Moreau P., Sollic F., Groleau D., Irvine M., Bonnefond J-M., Voogt J., 2003: Modélisation des effets directionnels dans l'infrarouge thermique : approche méthodologique. 5eme atelier ESCOMPTE, Toulouse, 26-27 mai 2003.
- Mestayer, P., P. Durand, P. Augustin, S. Bastin, J.-M. Bonnefond, B. Bénech, B. Campistron, A. Coppalle, H. Delbarre, B. Dousset, P. Drobinski, A. Druilhet, E. Fréjafon, S. Grimmond, D. Groleau, M. Irvine, C. Kergomard, S. Kermadi, J.-P. Lagouarde, A. Lemonsu, F. Lohou, N. Long, V. Masson, C. Moppert, J. Noilhan, B. Offerle, T. Oke, G. Pigeon, V. Puygrenier, S. Roberts, J-M. Rosant, F. Saïd, J. Salmond, M. Talbaut, J. Voogt, 2003 : UBL/CLU-Escompte : the Urban Boundary Layer Field experiment over Marseille and the data base, 4th International Conference on Urban Air Quality, 25-28 March 2003, Carolinum University, Prague, Czech Republic, Proceedings, pp. 392-395.
- Roberts, S.M. Oke, T.R. Voogt, J.A., Grimmond, C.S.B., Lemonsu, A. 2003. Energy storage in a European city centre. Fifth International Conference on Urban Climate, 1-5 September 2003, Lodz, Poland.
- Roberts, S. Oke, T. R., Voogt, J. A., Grimmond, C. S. B. and A. Lemonsu. 2003. Energy Storage in a Highly Developed Urban Environment. 37<sup>th</sup> Canadian Meteorological and Oceanographic Society Annual Congress, Ottawa ON, June 2-5, 2003.
- Soux, A., Voogt, J. and T. R. Oke 2003 A Model to Calculate what a Remote Sensor 'Sees' of an Urban Surface. 37<sup>th</sup> Canadian Meteorological and Oceanographic Society Annual Congress, Ottawa ON, June 2-5, 2003. **(Winner of Campbell Scientific Best Student Poster Prize).**
- Voogt, J.A. and Grimmond C.S.B. 2002. Sensible heat flux modelling of urban areas using radiometric surface temperature. Fourth Symposium on the Urban Environment, American Meteorological Society, 20-24 May 2002 Norfolk VA. pp. 111-112.
- Voogt, J.A. and Oke, T.R. 2002. Remote sensing and modelling of urban heat islands. Fourth Symposium on the Urban Environment, American Meteorological Society, 20-24 May 2002 Norfolk VA. pp. 54-55.
- Lagouarde J-P., Moreau P., Sollic F., Groleau D., Irvine M., Bonnefond J-M., Voogt J., 2002 : Etude expérimentale et modélisation des effets directionnels dans l'IRT en zone urbaine. Atelier de Modélisation de l'Atmosphère 2002, Météo France, Toulouse, 17-19 déc 2002. 111-114.
- Roberts, S.M., Oke, T.R., Voogt, J.A., Grimmond, C.S.B., and Masson, V. 2002. Heat storage in a European central city environment. Fourth Symposium on the Urban Environment, American Meteorological Society, 20-24 May 2002 Norfolk VA.



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- Voogt, J.A. and Soux, C.A. 2000. Methods for the assessment of representative urban surface temperatures. Third Symposium on the Urban Environment, American Meteorological Society, 14-18 Aug. 2000 Davis CA. pp. 179-180.
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- Soux, A., T.R. Oke, and J.A. Voogt. 2000. Anisotropy of urban surface temperatures: A numerical modelling approach. Third Symposium on the Urban Environment, American Meteorological Society, 14-18 Aug. 2000 Davis CA. pp. 171-172.
- Voogt, J.A., 1999. Image representations of complete urban surface temperatures. International Congress of Biometeorology and International Conference on Urban Climatology, Sydney, Australia, 8-12 Nov. 1999.
- Voogt, J.A. and C.S.B. Grimmond, 1999: Bulk heat transfer modelling of urban surface sensible heat flux. International Congress of Biometeorology and International Conference on Urban Climatology, Sydney, Australia, 8-12 Nov. 1999.
- Voogt, J.A. and T.R. Oke, 1999: Multi-temporal remote sensing of an urban heat island. International Congress of Biometeorology and International Conference on Urban Climatology, Sydney, Australia, 8-12 Nov. 1999
- Kanda, M., R. Moriwaki, J. Suzuki, M. Roth, A. Soux, J.A. Voogt, T.R. Oke, 1999. A novel dual-scintillation method to estimate area-averaged turbulent fluxes over an urban surface. International Congress of Biometeorology and International Conference on Urban Climatology, Sydney, Australia, 8-12 Nov. 1999.
- Soux, A., T.R. Oke, and J.A. Voogt, 1999. Modelling remotely sensed urban surface temperatures. International Congress of Biometeorology and International Conference on Urban Climatology, Sydney, Australia, 8-12 Nov. 1999.
- Soux, C.A., T.R. Oke, and J.A. Voogt, 1998. Modelling and remote sensing of the urban surface. Second Urban Environment Symposium, American Meteorological Society. Albuquerque, NM, Oct. 1998. pp. 88-89.
- Voogt, J.A. 1998. Complete surface temperatures of select buildings. 94<sup>th</sup> Annual Meeting of the American Association of Geographers, Mar. 1998, Boston, MA.
- Voogt, J.A. and C.S.B. Grimmond, 1998. Modelling urban surface energy balances using surface radiative temperatures. Second Urban Environment Symposium, American Meteorological Society. Albuquerque, NM, Oct. 1998. pp. 98-99.
- Voogt, J.A. and T.R. Oke, 1997. High resolution, multi-temporal remote sensing of an urban heat island. 93<sup>rd</sup> Annual Meeting of the American Association of Geographers, April 1997, Fort Worth, TX.
- Voogt, J.A. and T.R. Oke, 1996. Complete urban surface temperatures. 12<sup>th</sup> Conference on Biometeorology and Aerobiology, 76<sup>th</sup> American Meteorological Society Annual Meeting, Atlanta, GA.
- Voogt, J.A. and T.R. Oke, 1996. Thermal remote sensing of urban surface temperatures. International Conference on Urban Climatology, June 10-14 1996, Essen, Germany.
- Voogt, J.A. and T.R. Oke, 1996. Complete urban surface temperatures. 12<sup>th</sup> Conference on Biometeorology and Aerobiology, 76<sup>th</sup> American Meteorological Society Annual Meeting, Atlanta, GA.
- Voogt, J.A. and T.R. Oke, 1996. Urban surface temperatures. 92<sup>nd</sup> Annual Meeting of the American Association of Geographers, April 1996, Charlotte, NC.

- Grimmond, C.S.B., T.R. Oke, R. Spronken-Smith, E. Jauregui, C. Souch, T. Newton, T.S. King, J.A. Voogt, and M. Hubble, 1996. Heat storage in urban areas. 12<sup>th</sup> Conference on Biometeorology and Aerobiology, 76<sup>th</sup> American Meteorological Society Annual Meeting, Atlanta, GA.
- Voogt, J.A. 1995. "Complete" urban surface temperatures. 91<sup>st</sup> Annual Meeting of the American Association of Geographers, March 1995, Chicago, IL.
- Voogt, J.A. 1994. Thermal remote sensing of the three-dimensional urban surface. 90<sup>th</sup> Annual Meeting of the American Association of Geographers, April 1994, San Francisco, CA.
- Voogt, J.A. and T.R. Oke, 1992. Mobile acquisition of vertical surface temperature distributions in urban areas. Conference on Urban Thermal Environment, Special in Tohwa, 7-10 Sept. 1992, Fukouka, Japan.
- Voogt, J.A. and T.R. Oke, 1990. Use of a scale model to validate an urban canyon radiation model for nocturnal long-wave radiative fluxes. 86<sup>th</sup> Annual Meeting of the American Association of Geographers, April, Toronto.
- Voogt, J.A. and T.R. Oke, 1989. Validation of an urban canyon radiation model for nocturnal long-wave radiative fluxes. 4<sup>th</sup> International Conference on Urban Climate, Planning and Building, 6-11 Nov. 1989, Kyoto, Japan.

### **EXTERNAL RESEARCH FUNDING**

- 2016-2018 Voogt, J.A. Thermal Anisotropy of Urban Surfaces. Natural Sciences and Engineering Research Council, Accelerator Supplement, \$120,000.
- 2016-2020 Voogt, J.A. Thermal Anisotropy of Urban Surfaces. Natural Sciences and Engineering Research Council, Discovery Grant \$155,010.
- 2013-14 Voogt, J.A. Characterizing the urban heat island effect in Middlesex-London. Health Canada, \$9995.50
- 2011-2014 O'Carroll, D.M., Lundholm, T., Voogt, J.A., Sleep, B .E., Robinson, C.E., Smart, C.C. Impacts of Green Roofs on Storm Water Management and Urban Climate. Natural Sciences and Engineering Research Council, Strategic Project Grant \$522,459.
- 2012-2014 Lewis, J.,A. Bradford, C. Woudsma, J. Voogt, M. Moos, M. Drescher, S. Murphy. The urban futures partnership: collaborative planning through interactive technology. SSHRC Partnership Development Grants \$139,021.
- 2010-2015 Voogt, J.A. Understanding Urban Thermal Anisotropy. Natural Sciences and Engineering Research Council, Discovery Grant \$110,000
- 2008 Wooster, M.J., C.S.B. Grimmond, and J.A. Voogt ARSF (Airborne Research and Survey Facility) Award No: GB08/19. "Investigating the Urban Energy Balance of London (UK)". NERC (UK) Natural Environment Research Council. Award: The ARSF aircraft flies the proposed mission (in this case ~6 flights).
- 2006-2011 Voogt, J.A. and Oke, T.R. "Environmental Prediction in Canadian Cities." Canadian Foundation for Climate and Atmospheric Sciences. Networks Grant \$1.447 Million.
- 2005-2009 Voogt, J.A. "Temperatures of urban surfaces." Natural Sciences and Engineering Research Council, Discovery Grant \$81,500
- 2005 PIs Mestayer, P. and Lagouarde, J.-P. Teledetection Urbaine Environnementale CNRM (France), PNTS 5% of \$5000
- 2003 Masson et al. Meteo-France: "CAPITOUL project: Canopy and aerosol particles interaction in Toulouse urban layer experiment.", CNRM (France), PATOM, PNTS. \$5000 of \$46500 for monitoring canyon surface temperatures.

- 2001-04 Voogt, J.A. Natural Sciences and Engineering Research Council, “Thermal Remote Sensing of Urban Surface Climates” \$77,120 (over 4 years). Individual Research Grant.
- 1999 Voogt, J.A. City of London, “Energy and Air Emissions Reduction Strategy Task Force. Report on CO<sub>2</sub> Emissions and Energy Use in London”, \$7,500.
- 1998 Kanda, M., Roth, M., Voogt, J.A., Uno, I., Kubo, S., Nakamura, Y., Ueda, H., Oke, T.R., Moriwaki, R. Japan Science and Technology Corporation; Ministry of Education, Science, Sports and Culture, Government of Japan; Japan Society of the Promotion of Science Research of the Future Program, Natural Sciences and Engineering Research Council Canada, “Observations of Energy Balance and Turbulent Exchange Over a Residential Area in Tokyo Using Crane-Based Measurements”, \$76,600 (U.S) .
- 1998 Davenport, A., Conklin, D., El Damatty, A., El Naggar, H., Hangan, H., Hong, H., Kopp, G., Sancton, A., Shrubsole, D., Stillman, M., Surry, D., Wang, J., Whalley, J., Voogt, J.A., Ashmore, P., Campbell, L., Creed, I. “The Institute for Catastrophic Loss Reduction”, Ontario Research and Development Challenge Fund, \$500,000.
- 1997-01 Voogt, J.A., Natural Sciences and Engineering Research Council. “Urban Surface Temperature Measurement”, \$15,000.00 per year.

## INTERNAL RESEARCH FUNDING

- 2008 Voogt, J.A. “The Urban Energy Balance of London (UK)”, UWO Social Science Alumni Award. \$2292.
- 2001 Voogt, J.A. Faculty of Social Science. “ESCOMPTE Urban Boundary Layer Field Experiment” \$3000. Social Science Alumni Research Award.
- 2001 Creed, I.F., Smart, C.C., Voogt, J.A., Hocking, W.K. Power Supply for Environmental Monitoring and Analysis. Academic Development Fund, \$48,124.
- 1997 Voogt, J.A., U.W.O. VP Research. “Complete Surface Temperatures”, \$7,500.00
- 1996 Ashmore, P., Smart, C.C., Voogt, J.A., Pearce, C.M., Luckman, B.H., King, R.H., Nelson, A. U.W.O Academic Development Fund, “Terrain Mapping System”, \$66,300
- 1996 Voogt, J.A., U.W.O. Dean’s Grant. “London Urban Climate Monitoring”, \$350.00

## SCHOLARLY AND PROFESSIONAL ACTIVITIES

### *Service to Learned Societies*

#### *Current*

President (Elected by Board): International Association for Urban Climate (IAUC) 2014-17

Board Member (Elected): International Association for Urban Climate (IAUC) 2009-12; 2000-06.

Editorial Board: Atmosphere Ocean

Guest Editor: *Remote Sensing* 2015-2016; Special Issue: The Application of Thermal Urban Remote Sensing to Understand and Monitor Urban Climates. Editors: Benjamin Bechtel, Iphigenia Keramitsoglou, Simone Kotthaus, James A. Voogt, Klemen Zakšek.

Guest Editor: *Urban Climate* 2016-2017; Special Issue: 9<sup>th</sup> International Conference on Urban Climate - ICUC9. Editors: Valéry Masson, Aude Lemonsu, James Voogt, Gerald Mills, Manabu Kanda.

#### *Past*

Editorial Board (Physical Geography): Journal of Maps 2005-2013.

Invited Participant: Department of Energy: Office of Energy Efficiency and Renewable Energy, Buildings and Technologies Program. Cool Roofs Road Map and Strategy Workshop. Aug 9-10, 2010. Invited international panel member.

Invited Participant: US National Academies Board on Atmospheric Sciences and Climate Summer 2011 Community Workshop: Urban Meteorology: Scoping the Problem, Defining the Needs. National Academies Jonsson Center July 27-29, 2011 314 Quissett Woods Hole, MA 02543

Invited Instructor: World Meteorological Organization Inter-Regional Training Workshop on Urban Climatology. WMO Climate Information and Prediction Services and Commission for Climatology. Indian Institute of Tropical Meteorology, Pune India 6-10 September.

Symposium Organizer: Oke Symposium American Meteorological Society Annual Meeting 2009.

Chair (Elected): American Meteorological Society Board on the Urban Environment 2002-2005.

Board Member (Elected): American Meteorological Society Board on the Urban Environment 2000-2003.

Conference Organizer: American Meteorological Society: Timothy R. Oke Symposium, Phoenix AZ 12-15 Jan. 2009

Conference Co-organizer: American Meteorological Society 5<sup>th</sup> Urban Environment Symposium, Vancouver, B.C. Aug. 2004.

Conference co-chair and co-organizer: 4<sup>th</sup> Symposium on the Urban Environment, American Meteorological Society, Norfolk VA, USA. May, 2002.

Session Organizer: “Remote Sensing and Modelling of the Urban Surface” and “Urban Land Use/Cover Analysis with Multispectral Imagery” 2<sup>nd</sup> Symposium on the Urban Environment, American Meteorological Society, Albuquerque, NM, USA, 2-7 Nov. 1998.

Session Organizer: Urban Climate Sessions, Climate Specialty Group, American Association of Geographers. Boston, MA. Mar. 1998.

Session Organizer: Urban Climate Sessions, Climate Specialty Group, American Association of Geographers. Fort Worth, TX. April 1997.

### *Manuscript Reviews*

Annals of the Association of American Geographers	Applied Geography
Atmospheric Chemistry and Physics	Atmosphere Ocean
Bulletin of the American Meteorological Society	Boundary Layer Meteorology
Canadian Geographer	Canadian Journal of Civil Engineering
Canadian Journal of Remote Sensing	Ecological Indicators
Environmental Earth Sciences	Environmental Modeling and Software
Environmental Research Letters	Environmental Science & Technology
Geophysical Research Letters	ISPRS J. Photo. Rem. Sens.
International Journal of Climatology	IEEE J STARS
IEEE Trans. Geoscience and Remote Sensing	International Journal of Biometeorology
International Journal of Digital Earth	Int. Journal of Remote Sensing
Journal of Applied Meteorology and Climatology	Journal of Environmental Management
Journal of the Geographical Society of Berlin	Journal of Geophysical Research
Meteorology and Atmospheric Physics	Meteorological Applications
Northeastern Geographer	Physical Geography
Photogrammetric Engineering & Remote Sensing	QJRMS
Remote Sensing	Remote Sensing of Environment
Science of the Total Environment	Sensors
Theoretical and Applied Climatology	Urban Climate
Urban Ecosystems	

### *Book Reviews*

Christopherson, R., M-L Byrne, P Giles, 2013. *Geosystems*, Third Canadian Edition, Pearson Education Canada.

### *Book Prospectus Reviews*

Cooling the Future: Energy Solutions to Face the Energy Impact of the Climate Change, Increase of Population and Economic Growth, in the Building’s sector, M. Santamouris. Book Proposal to: World Scientific Publishing Co.

Improvement Measures of Urban Thermal Environment. Book Proposal to Springer 2014

Micrometeorology: Concepts and Practical Applications, H.A.R de Bruin. Book Proposal to Wiley-Blackwell 2013

Introduction to Physical Geography: A Systems Based Approach 2013. Book Proposal to Oxford University Press.

### Chapter Reviews

“Analysis of thermal patterns in relation to urban structure types – a case study for the city of Munich.” In *Thermal Remote Sensing: Sensors, Methods, Applications* (Springer)

“Climate change and urban climate” In: North Sea Region Climate Change Assessment

### Grant Reviews

Academy of Finland (2010), Belgian Earth Observation Programme (2011), CFCAS (2002), DOE (2010), Israel Science Foundation (2010, 2009, 2003), Mitacs (2015), NASA (2009), NASA Postdoc (2015, 2014), NSERC Discovery (2010, 2009, 2005), NSF (2009, 2008, 2007), NERC (UK) (2015, 2013, 2010, 2006), SSHRC (2014), Swedish International Aid (2006), Swiss National Science Foundation (2012).

### Other Reviews

Reviewer: US National Research Council of the National Academies, Board on Atmospheric Sciences and Climate, Committee on Urban Meteorology: Scoping the Problem, Defining the Needs. *Urban Meteorology: Forecasting, Monitoring, and Meeting Users’ Needs*. [www.nap.edu](http://www.nap.edu) ISBN-13: 978-0-309-25217-1. National Academy of Sciences. (One of 7 invited reviewers of the report).

External Reviewer US Department of Energy “Cool Roofs Road Map and Strategy Workshop” Office of Energy Efficiency and Renewable Energy, Buildings Technologies Program. August 9 – 10, 2010 Washington DC. (One of a panel of 7 external reviewers advising DOE on development of a strategy for implementation of Cool Roofs and other “cool” surfaces.)

External Reviewer NASA. ESSP Venture-class Science Investigations: Earth Venture-1 (\$35 million per grant). Science Panel Reviewer. Fall 2009.

### Membership in Professional and Learned Societies

American Meteorological Society:  
American Geophysical Union  
International Association for Urban Climate

### Professional Service and Experience

2004-07 Consultant: Perrin Quarles and Associates (on behalf of EPA). Urban Heat Islands.

2004 Consultant: Wildman, Harrold, Allen & Dixon LLP. Chicago roof reflectivity bylaw analysis.

2003-04 Consultant: Perrin Quarles Associates (Charlottesville, VA). Heat Island Mitigation Guidebook (for EPA).

2001 Consultant: Cassels Brock and Blackwell LLP.

1998 Consultant: Miller Thomson, Barristers and Solicitors (defending HMQ).  
Roadway icing civil trial: analysis of model predictions regarding roadway icing

1991 Consultant: Syncrude Canada (Subcontractor to Ward and Associates Ltd.)  
Settling pond monitoring station: climate instrumentation, datalogger monitoring programs, and user manual development.

1989 Consultant: D.F. Dickens Assoc.  
Atlas of Lancaster Sound Sensitivity to Oil Spills: climate data analysis.

1989 Consultant: Trident Consultants (formerly Envirocon Pacific Ltd.).  
Nechako Reservoir Project (Alcan Canada): climate data analysis, solar radiation modelling, computer programming

## UNIVERSITY ADMINISTRATIVE DUTIES

### *Departmental Service*

Acting Chair of the Department, July 2011- June 2012.

Chair: Scholarship Committee 2009-2010

Chair: Undergraduate Affairs Committee 2002-2006

Chair: Computer User's Committee 1997-99

Member: Undergraduate Affairs Committee 2010-13, 2006-07, 2000-01, 1998-99, 1996-97

Member: Promotion and Tenure Committee 2007-10

Member: Scholarship Committee 2013-14, 2014-15

Member: Graduate Affairs Committee 1997-98, 2014

Member: Chair Selection Committee 2003-04

Member: Annual Performance Evaluation Committee 2000-01, 07-08

Member: Appointments Committee 2002-03

### *Faculty Service*

Elected Member: Decanal Selection Committee: 2012-13

Member: Promotion and Tenure Committee, Department of Economics 2013-2015

Member: Faculty of Social Science Nominating Committee 2014-2015

Member: Environmental Education Working Group: 2005-2006

Geography Representative: 2002-2006 Social Science Educational Policy Committee

### *University Service*

President's Advisory Committee on the Environment (PACES) 2014-2016

Ontario Climate Consortium – Western University Representative 2012-2014

Vice-Chair (elected): SCAPA (Senate Committee on Academic Policy and Awards) 2007-08

Member (elected by Senate): SCAPA (Senate Committee on Academic Policy and Awards). 2004 -08

Member (appointed): SSHRC Internal Awards Awards Committee. 2004-2006

Member (elected): Environmental Science Graduate Program Committee 2000-03.

Chair (elected): 1999 Subcommittee on Computing and Networking Services (SUCNS), Social Science

## COMMUNITY SERVICE

(Major Activities only)

2006 (Feb.) CBC Radio: Quirks and Quarks Interview (Does heat from cities contribute to global warming?)

1998-00 Chair: Energy/Air Emissions Reduction Strategy Task Force, City of London.