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**CURRICULUM VITA**  
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**EDUCATION:**

Ph.D.	1990	S. U. N. Y. at Buffalo/University at Buffalo (Geography)
M.A.	1985	S. U. N. Y. at Buffalo/University at Buffalo (Geography)
Honour Diploma	1984	Hong Kong Baptist College/University (Geography)

**RESEARCH INTERESTS:**

1) Spatial dimensions of population: segregation, ethnic diversity, and relationships between youth and elderly populations; 2) Geo- and statistical visualization, especially on spatial data quality; 3) Spatial epidemiology and public health; and 4) Historical GIS.

**ACADEMIC EXPERIENCE:**

2008 -	Professor, Geography & GeoInformation Science, George Mason University
2013 - 2015	Professor, Department of Geography, University of Hong Kong
2014 - 2015	Director, International Centre for China Development Studies, University of Hong Kong
2006- 2008	Professor & Chair, Earth Systems and GeoInformation Sciences, College of Science, George Mason University
2004 - 2006	Professor & Chair, Earth Systems and GeoInformation Sciences, School of Computational Sciences / Geography, George Mason University
2002 - 2004	Associate Professor & Chair, Earth Systems and GeoInformation Sciences, School of Computational Sciences / Geography, George Mason University
1998 - 2002	Associate Professor, Geography, George Mason University
1993 - 1998	Assistant Professor, Geography & Earth Sciences, George Mason University
1990 - 1993	Assistant Professor, Department of Geography, University of Connecticut
1990	Instructor, Department of Geography, Brock University, St. Catharine, Canada.
1987, 1989	Instructor, Department of Geography, University at Buffalo

**Other appointments**

1995-	Faculty of Environmental Science and Policy (affiliated)
2013 – 2018	Adjunct Professor, Department of Health Services Policy and Management, Arnold School of Public Health, University of South Carolina

## **I. PUBLICATIONS (\*graduate students):**

### **Books**

(I) Lee, J. and Wong, D.W.S. 2001. *Spatial Analysis with ArcView*. Wiley & Sons, pp.192.

(II) Wong, D. W. S. and J. Lee. 2005. *Statistical Analysis and Modeling of Geographic Information*. Wiley & Sons, pp. 464. (The book was translated into Chinese and published in 2008: ArcView GIS与ArcGIS 地理信息统计分析, 中国财政经济出版社, ISBN 978-7-5095-0415-4)

(III) Wong, D. W. S., K. K. Wong, H. Chung and J. J. Wang. 2018. *Geography of China*. Guilford.

### **Edited Books**

(IV) Yang, C., D. Wong, Q. Miao, and R. Yang. (eds) *Advanced Geoinformation Science*. Boca Raton: CRC Press, 2010, pp. 525.

(V) Lloyd, C. D., I. G. Shuttleworth, and D. W. S. Wong (2014, eds) *Social-spatial Segregation: Concepts, Processes and Outcomes*. Bristol, UK: The Policy Press.

### **Editorial/Letter**

Breen, N., J. S. Jackson, F. Wood, D.W.S. Wong, X. Zhan, the Data in Health Disparities Writing Team. 2019. Translational health disparities research in a data-rich world. *American Journal of Public Health*, Supplement 1, Vol. 109, No. S1, S41 – S42.

Das Gupta, D., and D. W. S. Wong. 2020. No more “social distancing” but practice physical separation. *Canadian Journal of Public Health*.

### **Book chapters**

(a) Wong, D.W.S. 1995. Aggregation Effects in Geo-referenced Data. In S. L. Arlinghaus and D. A. Griffith (Eds) *Practical Handbook of Spatial Statistics*, CRC Press, pp. 83-106.

(b) Wong, D.W.S. 2003. What Color is Segregation? Changing Spatial Segregation of Asian: 1980-2000. In John W. Frazier and Florence Margai (eds) *Multicultural Geographies: Persistence and Change in U. S. Racial/Ethnic Patterns*, Global Academic Publishing, pp. 101-112.

(c) Wong, D.W.S. 2003. A Comparison of Traditional and Spatial Measures of Segregation: Some Empirical Findings. In John W. Frazier and Florence Margai (eds) *Multicultural Geographies: Persistence and Change in U. S. Racial/Ethnic Patterns*, Global Academic Publishing, pp. 247-262.

(d) Wong, D.W.S. and K. Matthews.\* 2004. Population Characteristics and Ethnic Diversity in China: 1982-1990. In Chiao-min Hsieh and M. Lu (eds) *The Changing China: A Geographic Appraisal*, Westview Press, pp. 211-228.

- (e) Yang, C., Kafatos, M., Wong, D., Yang, R., 2006. Network GIS. In J. Qu, G. Gao, M. Kafatos, R. Murphy and V. Solomonson (eds). *Earth Systems and Remote Sensing Tools*, Springer-Verlag and Tsinghua University Press, Vol. 2, pp. 293-312.
- (f) Wong, D. W. S. 2008. Conceptual and Operational Issues in Incorporating Segregation Measurements in Hedonic Price Modeling. In A. Baranzini, J. Ramirez, C. Schaerer and P. Thalmann (eds). *Hedonic Methods in Housing Markets: Pricing Environmental Amenities and Segregation*, Springer, pp. 159 – 175.
- (g) Wong, D. 2009. The Modifiable Areal Unit Problem (MAUP). In A.S. Fotheringham and P. A. Rogerson (eds) *The SAGE Handbook of Spatial Analysis*, London: Sage, pp. 105-123.
- (h) Yang, C., D. Wong, and R. Yang. 2010. Advanced geoinformation science: an overview. In C. Yang, D. Wong, Q. Miao, and R. Yang. (eds) *Advanced Geoinformation Science*. CRC Press, pp. 1-16.
- (i) Croitoru. A., D. Guo, F. Wang, D. Wong, P. Agouris, and A. Stefanidis. 2010. Spatial data analysis and geoinformation extraction. In C. Yang, D. Wong, Q. Miao, and R. Yang. (eds) *Advanced Geoinformation Science*. CRC Press, pp. 145-204.
- (j) Aron, J. S. Luzzadder-Beach, M. Sun\*, F. Wang, L. E. Jackson, G. Susanke, E. Washburn, J. White, D. Wong, C. Yang, and S. Young. 2010. Environmental and related applications. In C. Yang, D. Wong, Q. Miao, and R. Yang. (eds) *Advanced Geoinformation Science*. CRC Press, pp. 303-350.
- (k) Wong, D. W. (2014) Using a general spatial pattern statistic to evaluate spatial segregation. In C. D. Lloyd, I. G. Shuttleworth and D. W. S. Wong. (eds) *Social-spatial Segregation: Concepts Processes and Outcomes*. The Policy Press, Bristol, UK, pp. 45-64.
- (l) Wong, D. W. (2015) From aspatial to spatial, from global to local and individual: Are we on the right track to spatialize segregation measures? In F. M. Howell, J. R. Porter and S. A. Matthews. (eds) *Recapturing Space: New Middle-Range Theory in Spatial Demography*. Volume 1, Spatial Demography Series. Dordrecht: Springer, pp. 77-98.
- (m) Griffith, D. A., D. W. Wong, and Y. Chun. 2016. Uncertainty-related research issues in spatial analysis. In W. Shi, B. Wu and A. Stein. (eds) *Uncertainty Modelling and Quality Control for Spatial Data*. Baton Raton, FL: Taylor and Francis, pp. 3-12.
- (n) Oka, M., and D. W. S. Wong. 2019. Segregation: a multi- contextual and multi-faceted phenomenon in stratified societies. In *Handbook of Urban Geography*, eds. T. Schwanen and R. van Kempen, 255–280. Edward Elgar Publishing.

**Peer reviewed journal papers (published and accepted): total: 93**

*A. Segregation Measurement*

- [1] Wong, D. W. S. 1993. Spatial indices of segregation. *Urban Studies* 30:559-572.
- [2] Wong, D. W. S. 1996. Enhancing segregation studies using GIS. *Computers, Environment and Urban Systems*, 20(2): 99-109.
- [3] Wong, D. W. S. 1997. Spatial dependency of segregation indices. *The Canadian Geographer* 41(2): 128-136.
- [4] Wong, D. W. S. 1998. Spatial patterns of ethnic integration in the United States. *The Professional Geographer* 50(1): 13-20.
- [5] Wong, D. W. S. 1998. Measuring multi-ethnic spatial segregation. *Urban Geography* 19(1): 77-87.
- [6] Wong, D. W. S. and W. K. Chong\*, 1998. Using spatial segregation measures in GIS and statistical modeling packages. *Urban Geography* 19(5): 477-485.
- [7] Wong, D. W. S. 1999. A geographical analysis of multiethnic households in the United States. *International Journal of Population Geography* 5: 31-48.
- [8] Wong, D. W. S., H. Lasus, and R. F. Falk, 1999. Exploring the variability of segregation index D with scale and zonal systems: An analysis of thirty U.S. cities. *Environment and Planning A* 31: 507-522.
- [9] Wong, D. W. S. 1999. Geostatistics as measures of spatial segregation. *Urban Geography* 20(7): 635-647.
- [10] Wong, D. W. S. 2000. Ethnic integration and spatial segregation of the Chinese population. *Asian Ethnicity* 1(1): 53-72.
- [11] Wong, D. W. S. 2002. Modeling local segregation: A spatial interaction approach. *Geographical and Environmental Modelling* 6(1): 81-97.
- [12] Wong, D. W. S. 2002. Spatial measures of segregation and GIS. *Urban Geography* 23(1): 85-92.
- [13] Wong, D. W. S. 2003. Implementing spatial segregation measures in GIS. *Computers, Environment and Urban Systems* 27: 53-70.
- [14] Wong, D. W. S. 2003. Spatial decomposition of segregation indices: A framework toward measuring segregation at multiple levels. *Geographical Analysis* 35(3): 179-194.
- [15] Wong, D. W. S. 2004. Comparing traditional and spatial segregation measures: A spatial scale perspective. *Urban Geography* 25(1): 66-82.
- [16] Wong, D. W. 2005. Formulating a general spatial segregation measure. *The Professional Geographer* 57(2): 285-294.
- [17] O'Sullivan, D. and D. W. Wong. 2007. A surface-based approach to measuring spatial segregation. *Geographical Analysis* 39: 147-168.
- [18] Wong, D. W. S. 2008. A local multi-dimensional approach to evaluate changes in segregation. *Urban Geography* 29(5): 455-472.
- [19] Wong, D. W. S. and S-L Shaw. 2011 Measuring segregation: an active-space approach. *Journal of Geographical Systems* 13(2): 127-145.
- [20] Oka, M. and D. W. S. Wong. 2014. Capturing the two dimensions of residential segregation at the neighborhood level for health research. *Frontiers in Public Health: Hypothesis and Theory section*. August, Volume 2, Article 118. DOI: 10.3389/fpubh.2014.00118

- [21] Oka, M. and D. W. S. Wong. 2015. Spatializing segregation measures: an approach to better depict social relationships. *Cityscape* 17(1): 97-113.
- [22] Oka, M. and D. W. S. Wong. 2016. Spatializing area-based measures of neighborhood characteristics for multilevel regression analyses: An areal median filtering approach. *Journal of Urban Health* 93(3): 551 – 571.
- [23] Yao, J., D. W. S. Wong, N. Bailey and J. Minton. 2019. Spatial segregation measures: A methodological review. *Tijdschrift voor economische en sociale geografie*. 10(3): 235-250. (July) DOI:10.1111/tesg.12305

#### B. *Spatial Epidemiology and Public-Environmental Health*

- [1] Perlin, S. A., K. Sexton, and D. W. S. Wong 1999. An examination of race and poverty for populations living near industrial sources of air pollution. *Journal of Exposure Analysis and Environmental Epidemiology* 9: 29-48.
- [2] Perlin, S. A., D. W. S. Wong, and K. Sexton. 2001. Residential proximity to industrial source of air pollution: Interrelationships among race, poverty, and age. *Journal of Air and Waste Management* 51: 406-421.
- [3] Wong, D. W. S. 2003. A framework for using Geographic Information Systems technology for environmental risk assessment. *Journal of Children's Health* 1(2): 215-227.
- [4] Wong, D. W. S., L. Yuan, and S. A. Perlin. 2004. Comparison of spatial interpolation methods for the estimation of air quality data. *Journal of Exposure Analysis and Environmental Epidemiology* 14(5): 404-415.
- [5] Allen, T. R. and D. W. Wong. 2006. Exploring GIS, spatial statistics, and remote sensing for risk assessment of vector-borne diseases: A West Nile Virus example. *The International Journal of Risk Assessment and Management* 6 (4/5/6): 253-275.
- [6] White, K.\*, L. N. Borrell, D. W. Wong, S. Galea, G. Ogedegbe, and M. M. Glymour. 2011. Racial/ethnic residential segregation and self-reported hypertension among U.S.- and foreign-born blacks. *American Journal of Hypertension* 24(8): 904-10.
- [7] Sudano, J. J., A. Perzynski, D. W. Wong, N. Colabianchi, and D. Litaker. 2013. Neighborhood racial residential segregation and changes in health or death among older adults. *Health and Place* 19: 80 – 88. (PMCID: PMC3537921)
- [8] Lee, J., M. Alnasrallah, D. Wong, H. Beard, E. Logue. 2014. Impacts of scale on geographic analysis of health data: an example of obesity prevalence. *ISPRS International Journal of Geo-Information* 3: 1198-1210.
- [9] Zhang, X., E.J. Pérez-Stable, P. E. Bourne, E. Peprah, O. K. Duru, N. Breen, D. Berrigan, F. Wood, J. S. Jackson, D. W. S. Wong, J. Denny. 2017. Big data science: opportunities and challenges to address minority health and health disparities in the 21st century. *Ethnicity & Disease*, 27(2): 95-106.
- [10] Breen, N., D. Berrigan, J. S. Jackson, D. W. S. Wong, F. B. Wood, J. C. Denny, X. Zhang, and P. E. Bourne. 2019. *Health Equity*. 3(1): <http://doi.org/10.1089/heq.2019.0042>
- [11] Yang, C., D. Sha, Q. Liu, Y. Li, H. Lan, W. W. Guan, T. Hu, Z. Li, Z. Zhang, J. H. Thompson, Z. Wang, D. Wong, S. Ruan, M. Yu, D. Richardson, L. Zhang, R. Hou, Y. Zhou, C. Zhong, Y. Tian, F. Beaini, K. Carte, C. Flynn, W. Liu, D. Pfoser, S. Bao, M. Li, H. Zhang, C. Liu, J. Jiang, S. Du, L. Zhao, M. Lu, L. Li, H. Zhou & A. Ding. 2020. Taking the pulse of COVID-19: a spatiotemporal perspective. *International Journal of Digital Earth*. <https://doi.org/10.1080/17538947.2020.1809723>

- [12] Wong, D. W. S. and Y. Li\* (2020). Spreading of COVID-19: Density matters. *PLoS ONE* 15(12): e0242398. <https://doi.org/10.1371/journal.pone.0242398>.

### C. Population-Urban-Economic Studies

- [1] Wong, D. W. S. and A. S. Fotheringham, 1990. Urban systems as examples of bounded chaos: exploring the relationship between fractal dimension, rank-size, and rural-to urban migration. *Geografiska Annaler* 72 B (2-3): 89-99.
- [2] Thaper, N. \*, D. W. S. Wong and J. Lee. 1999. Changing geography of the population centroids in the United States. *Geographical Bulletin* 41(1): 45-56.
- [3] Fonseca, J. W. and D. W. S. Wong. 2000. Changing patterns of population density in the United States. *The Professional Geographer* 52(3): 504-517.
- [4] Griffith, D. A. and D. W. Wong. 2007. Modeling population density across major U.S. cities: A polycentric spatial regression approach. *Journal of Geographical Systems* 9: 53-75.
- [5] Li, J. \*, D. W. Wong and D. A. Griffith. 2009. Exploring and simulating the regularities in intra-urban population density structure. *Annals of GIS* 15(1): 11-22.
- [6] Owen, K. \* and D. W. Wong. 2013. An approach to differentiate informal settlements using spectral, texture, geomorphology and road accessibility metrics. *Applied Geography* 38:107-118.
- [7] Falcone, J. A.\* and D. W. Wong. 2013. Mapping urban land uses in the U.S. by census zone using nationally-available data. *Land Use Science* 8(4): 466-488.
- [8] Owen, K.\* and D. W. Wong. 2013. Exploring structural differences between rural and urban informal settlements from imagery: The basureros of Cobán. *GeoCarto International* 28(7): 562-581.
- [9] Liao, B. and D. W. Wong. 2015. Changing urban residential patterns of Chinese migrants: A case of Shanghai from 2000 to 2010. *Urban Geography* 36(1): 109-126.
- [10] Wong, D. W., G. Strang,\* W-Y. Tang,\* and W. Wu.\* 2015. How diverse can a “Chinese city” be? A case of Hong Kong. *Eurasian Geography and Economics* 56(3): 331-355. DOI: 10.1080/15387216.2015.1091366
- [11] Rossiter, K. M. \*, D. W. S. Wong, and P. L. Delamater. 2018. Congressional redistricting: keeping communities together? *The Professional Geographer* 70(4): 609-623.
- [12] Rossiter, K. M. \*, and D. W. S. Wong. 2019. Congressional districts: how "equal" are they? *GeoJournal* DOI.org/10.1007/s10708-018-09963-z
- [13] Zhao, S.X.B., Wong, D.; Wong, D.W.S., and Y. P. Jiang. 2020. Ever-transient FDI and ever-polarizing regional development: Revisiting conventional theories of regional development in the context of China, Southeast and South Asia. *Growth and Change: A Journal of Urban and Regional Policy* DOI: 10.1111/grow.12358
- [14] DasGupta, D. and D. W.S Wong. 2020. How “dependent” are we? A spatiotemporal analysis of the young and the older adult populations in the US. *Population Research and Policy Review* DOI: 10.1007/s11113-020-09590-y

### D. Geosciences/Physical Environment

- [1] Zhu, Y. \*, C. Yang, D. W. Wong, and M. Kafatos. 2005. A distributed GIS for managing Shanghai landscape resources. *Geographic Information Sciences (The Annals of GIS)* 11(1): 29 - 39.

- [2] Tang, Y.\* and D. W. Wong. 2006. Exploring and visualizing sea ice chart data using Java-based GIS tools. *Computers and Geosciences* 32(6): 846-858.
- [3] Lu, G. Y.\*, L. Chiu, and D. W. Wong. 2007. Vulnerability assessment of rainfall-induced debris-flows in Taiwan. *Natural Hazards* 43: 223-244.
- [4] Cao, Y.\*, C. W. Yang, and D. W. Wong. 2009 An interoperable spatiotemporal weather radar data disseminating system. *International Journal of Remote Sensing* 30(5): 1313-1326.
- [5] Li, J.\* and D. W. S. Wong. 2010. Effects of DEM sources on hydrologic applications. *Computers, Environment and Urban Systems*. 34: 251-261.
- [6] Li, J. \*, H. Wu, C. Yang, D. W. Wong and J. Xie. 2011. Visualizing dynamic Geosciences phenomena using an octree-based view-dependent LOD strategy within virtual globes. *Computers & Geosciences* 37(9): 1295-1302.
- [7] Camelli, F., J-M Lien, D. Shen, D. W. Wong, M. Rice, R. Löhner, and C. Yang. 2012 Generating seamless surfaces for transport and dispersion modeling in GIS. *GeoInformatica* 16(2): 307-327.
- [8] Kong, J-L, X-M. Sun, D. W. Wong, Y. Chen, J. Yang, Y. Yan, and L-X. Wang. 2015. A semi-analytical model for remote sensing retrieval of suspended sediment concentration in the Gulf of Bohai, China. *Remote Sensing* 7: 5373-5397 (DOI:10.3390/rs70505373)

#### E. GIS

- [1] Wong, D. W. S. and J. W. Meyer. 1993. A spatial decision support system approach to evaluate the efficiency of a meals-on-wheels program. *The Professional Geographer* 45:332-341.
- [2] Thompson, D., F. E. Lindsay\*, P. E. Davis\*, D. W. S. Wong, 1997. Towards a Framework for learning with Geographical Information Systems: A case of *UrbanWorld*, an hypermap learning environment based on GIS. *Transactions in GIS*, 2(2): 151-168.
- [3] Wong, D. W. S. 1998. Creating a web-based electronic reserve library for teaching world regional geography. *Journal of Geography in Higher Education* 22(2): 257-262.
- [4] Yang, C., D. W. S. Wong, R. Yang, M. Kafatos, and Q. Li. 2005. Performance improving techniques in web-based GIS. *International Journal of Geographical Information Science* 19(3): 319-342.
- [5] Lu, Y.\*, E. Behar\*, S. Donnelly\*, J-M. Lien, F. Camelli and D. Wong. 2011. Fast and robust generation of city-scale seamless 3D urban models. *Computer-Aided Design* 43(11): 1380-1390.
- [6] Lien, J-M., F. Camelli, D. Wong, Y. Lu and B. McWhorter. 2012. Creating building ground plans via robust K-way union. *The Visual Computer* 28(4): 401-412.
- [7] Shen, D., D. W. Wong, F. Camelli, and Y. Liu. 2013. An ArcScene plug-in for volumetric data conversion, modeling and spatial analysis. *Computers & Geosciences* 61: 104-115.
- [8] Li, J.\* and D. W. Wong. 2014. STModelViz: A 3D spatiotemporal GIS using a constraint-based approach. *Computers, Environment and Urban Systems* 45: 34-49.
- [9] Li, J., Zhang, T., Wong, D. W., & Mooney, M. (2016). A view-dependent spatiotemporal saliency-driven approach for time varying volumetric data in geovisualization. *Computers, Environment and Urban Systems*, 59: 64-77.



#### F. Spatial Analysis-Statistical Methods

- [1] Wong, D. W. S. 1992. The reliability of using the iterative proportional fitting technique. *The Professional Geographer* 44:340-348.
- [2] Wong, D. W. S. 2000. Several fundamentals in implementing spatial statistics in GIS: Using centrophraphic measures as examples. *Geographic Information Science* 5(2): 163-174.
- [3] Wong, D. W. S. 2001. Location-specific cumulative distribution function (LSCDF): An alternative to spatial correlation analysis. *Geographical Analysis* 33(1): 76-93.
- [4] Griffith, D. A., D. W. S. Wong, and T. Whitfield.\* 2003. Exploring relationships between the global and regional measures of spatial autocorrelation. *Journal of Regional Science* 43(4): 683-710.
- [5] Lu, G. Y.\* and D. W. Wong. 2008. An adaptive inverse distance weighting spatial interpolation technique. *Computers & Geosciences* 34: 1044-1055.
- [6] Wong, D. W. S. 2011 Exploring spatial patterns using an expanded spatial autocorrelation framework. *Geographical Analysis* 43(3): 327-338.
- [7] Bivand, R.S., D.W.S. Wong. 2018. Comparing implementations of global and local indicators of spatial association. *TEST* 27(3): 716.
- [8] Koo, H.\*, D.W.S. Wong, Y. Chun. 2019. Measuring global spatial autocorrelation with data reliability information. *The Professional Geographer* 71(3): 551-565.
- [9] Koo, H.\*, Y. Chun, and D. W. S. Wong. 2021. Measuring local spatial autocorrelation with Data reliability information. *The Professional Geographer* (accepted)  
<https://doi.org/10.1080/00330124.2021.1898993>

#### G. Data Quality Issues, and Statistical & Geo-visualization

- [1] Fotheringham, A.S. and D. W. S. Wong, 1991. The modifiable areal unit problem in multivariate statistical analysis. *Environment and Planning A* 23:1025-1044.
- [2] Wong, D. W. S. 2001. Interval and placement effects on topographic data: Using viewshed analysis as an example. *Geographic Information Science* 7(1): 53-65.
- [3] Sun, M.\* and D. W. S. Wong. 2010. Incorporating data quality information in mapping the American Community Survey data. *Cartography and Geographic Information Science* 37 (4): 285-300.
- [4] Wiecek, W. F., A. M. Delmerico\*, P. A. Rogerson, and D. W. S. Wong. 2012. Clusters in irregular areas and lattices. *Wiley Interdisciplinary Reviews (WIREs): Computational Statistics* 4(1): 67-74.
- [5] Sun, M.\*, B. J. Kronenfeld, and D. W. Wong. 2013. Cartographic techniques for Communicating class separability: Alternative choropleth maps of median household income, Iowa, USA, 2006-2010. *Journal of Maps* <http://dx.doi.org/10.1080/17445647.2013.768183>
- [6] Wong, D. W. and M. Sun.\* 2013. Handling Data quality information of survey data in GIS: a case of using the American Community Survey data. *Spatial Demography* 1(1): 3-16.
- [7] Sun, M.\*, D. W. Wong, and B. Kronenfeld. 2015. A classification method for choropleth maps incorporating data reliability information. *The Professional Geographer* 67(1): 72-83. DOI:10.1080/00330124.2014.888627
- [8] Sun, M.\*, D. W. Wong, and B. Kronenfeld. 2017. A heuristic multi-criteria classification approach incorporating data quality information for choropleth mapping. *Cartography and Geographic Information Science* 44(3): 246-258. DOI: 10.1080/15230406.2016.1145072 (PMCID: PMC5342899)



- [9] Sun, M., and D. W. S Wong. 2017. Interactive-heuristic spatial aggregation as a means to improve attribute reliability. *Computers, Environment and Urban Systems* 65: 15-27 <https://doi.org/10.1016/j.compenvurbsys.2017.04.007>
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#### H. Spatial Social Media Data Analysis

- [1] Xu, C., D. W. Wong, and C. Yang. 2013. Evaluating the “Geographical Awareness” of individuals: an exploratory analysis of Twitter data. *Cartography and Geographic Information Science* 40(2): 103-115.
- [2] Huang, Q. and D. W. S. Wong. 2015. Modeling and visualizing regular human mobility patterns with uncertainty: an example using Twitter data. *Annals of the Association of American Geographers* 105(6): 1179-1197. DOI: 10.1080/00045608.2015.1081120
- [3] Huang, Q. and D. W. S. Wong. 2016. Activity patterns, socioeconomic status and urban spatial structure: what can social media data tell us? *International Journal for Geographical Information Science* 30(9): 1873-1898. DOI: 10.1080/13658816.2016.1145225
- [4] Wong, D. W. S. and Q. Huang. 2017 “Voting with their feet”: delineating the sphere of influence using social media data. *ISPRS International Journal of Geo-Information* 6(11), 325 doi:10.3390/ijgi6110325

#### I. Historical GIS-Geography-Humanities

- [1] Zhang, P., D. W. Wong, B. K. L. So, and H. Lin. 2012 An exploratory spatial analysis of Western medical services in Republican Beijing. *Applied Geography* 32(2): 556-565.
- [2] Wong, D. W., B. K. L. So, and P. Zhang. 2012. Addressing quality issue of historical GIS data: an example of Republic Beijing. *Annals of GIS* 18(1): 17-29.
- [3] Ng, M., E. Chow, and D. W.S. Wong. 2016. Geographical dimension of colonial justice: Using GIS in research on law and history. *Law and History Review* 34(4): 1027-1045.
- [4] Chow, E. T., M. Ng, D. W. S. Wong, and C. C. Chan. 2019. Exploratory multivariate space-time analysis of colonial justice in Hong Kong during 1900-1930. *GeoJournal*. <https://doi.org/10.1007/s10708-019-10066-6>
- [5] Prior, J.W.\* and D. W. S. Wong. 2021. Exploring different dimensions in defining the Alabama Black Belt. *GeoJournal* DOI:10.1007/s10708-020-10325-x

#### Editorials on Special Issues (also served as guest editor):

- Wong, D. W. S. and C. G. Amrhein, 1996. Research on the MAUP: Old Wine in a New Bottle or Real Breakthrough? (An editorial note for the special issue in the MAUP) *Geographical Systems* 3: 73-76.
- Yang, C., D. W. Wong, and B. Li. 2005. Introduction to Computing and Computational Issues of Distributed GIS. (An editorial note for the special issue on Distributed GIS) *Geographic Information Sciences* 11(1): 1-3.
- Wong, D. W., M. Reibel and C. Dawkins. 2007. Introduction-Segregation and neighborhood change: where are we after more than a half-century of formal analysis. (An editorial note for the first special issue on Segregation and Neighborhood Change) *Urban Geography* 28(4): 305-311.

- Dawkins, C. J., M. Reibel and D. W. Wong. 2007. Introduction-Further innovations in segregation and neighborhood change research. (An editorial note for the second special issue on Segregation and Neighborhood Change) *Urban Geography* 28(6): 513-515.
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1. Wong, D.W.S. 2004. The Modifiable Areal Unit Problem. In B. Warf, D. Janelle, and K. Hansen (eds) *WorldMinds: Geographical Perspectives on 100 Problems*, Kluwer Academic Publishers, pp. 571-578.
2. Wong, D. W. S. 2006. Ecological Fallacy. In B. Warf (eds). *Encyclopedia of Human Geography*, Sage Publications, pp. 117-118.
3. Wong, D. W. 2008. Ecological Fallacy. In K. Kemp (ed) *Encyclopedia in Geographic Information Science*, Sage Publications, pp. 119-120
4. Wong, D. W. 2009. Modifiable Areal Unit Problem. In Robert Kitchin and Nigel Thrift (eds) *International Encyclopedia of Human Geography*, Volume 1, The Netherlands: Elsevier, pp. 169-174.
5. Wong, D. W. 2009. Segregation Indices. In Robert Kitchin and Nigel Thrift (eds) *International Encyclopedia of Human Geography*, Vol. 1, The Netherlands: Elsevier, pp. 70-75.
6. Wong, D. W.S. 2017. Interpolation, inverse-distance weighting. In Douglas Richardson (ed) *The International Encyclopedia of Geography: People, the Earth, Environment, and Technology*, Wiley & Sons. DOI: 10.1002/9781118786352.wbieg0066
7. Wong, D.W.S. 2020. Segregation Indices. In: Kobayashi, A. (Ed.), *International Encyclopedia of Human Geography*, 2nd edition. vol. 12, Elsevier, pp. 125–131. <https://dx.doi.org/10.1016/B978-0-08-102295-5.10316-6>

### Refereed Proceedings Papers:

- (i) Wong, D.W.S. 1993. Impediments to the Adoption of GIS/SDSS in Service Delivery Systems. In R.E. Klosterman and S. P. French (eds.) *Proceedings, Third International Conference on Computers in Urban Planning and Urban Management*, Vol. 1, pp. 451-465.
- (ii) Wong, D. W. S. and C.V. Wu. 1995. Quality of Aggregated Spatial Data - a Guidance for Decision. In R. Wyatt and H. Hossain (eds.) *Proceedings, Fourth International Conference on Computers in Urban Planning and Urban Management*, pp. 559-570.
- (iii) Wong, D.W.S. and J. Huzil. 1995. The Power and Limits of Maps: An Analysis of Seminar Participation. *Proceedings, 18th Annual Applied Geography Conference*, pp. 175-182.
- (iv) Wong, D.W.S. and C.V. Wu. 1996. Spatial Metadata and GIS for Decision Support. *Proceedings of the 29<sup>th</sup> Hawaii International Conference on System Science (HICSS)*, Volume 3: Collaboration Systems and Technology, pp. 557 – 566. January 3-6, 1996. (<http://www.computer.org/portal/web/csdl/proceedings/h#4>).
- (v) Yang C., M. Kafatos, R. Yang, D. Wong, and Y. Cao\*, 2004, GridGIS: A next generation GIS. *CITSA Conference Proceedings*, July 21-25, Orlando, FL, pp.22-27.

- (vi) Sun, M.\* and D. W. Wong, 2010, Why taking the mass transit in the Washington, DC area? *Papers of the Applied Geography Conferences*, October 19-23, 2010, Fort Worth, TX, Volume 33, pp. 353 – 362.
- (vii) Lien, J-M., F. Camelli, and David Wong, 2011, Fast and robust generation of city scale urban ground plan. *Proceedings, Computer Graphics International (CGI)*, Ottawa, Ontario, Canada, June 2011.
- (viii) Sun, M., D. Wong and B. Kronenfeld. 2015. *EM-GIS '15 Proceedings of the 1st ACM SIGSPATIAL International Workshop on the Use of GIS in Emergency Management*. Article No. 20, ACM New York, NY, USA. ISBN: 978-1-4503-3970-4 DOI: <http://dx.doi.org/10.1145/2835596.2835617>

**Conference Proceedings Papers:**

- (1) Wong, D.W.S., 1988. An Empirical Model of Gentrification: An Operationalization of a Modified Rent Gap Theory. *Conference Proceedings for The City of the 21<sup>st</sup> Century Conference*, April 7 8 9, 1988. Department of Planning, College of Architecture and Environmental Design, Arizona State University, Tempe, Arizona, pp.359-364.
- (2) Wong, D.W.S. 1989. A Critique and Reformulation of Smith's Rent Gap Theory. In R.A. Crooker (ed.) *1988 Proceedings of the Middle States Division of the Association of American Geographers* Vol.21, pp.64-76.
- (3) Wong, D.W.S. 1990. Spatial Analysis and the Use of Census Data. In D. Hanink (ed.) *1990 Proceedings of the Joint NESTVAL-Middle State AAG Division Meeting*, pp.51-56.
- (4) Wong, D.W.S. 1993. Adoption of GIS in Service Delivery Programs: Obstacles and Aids. In *GIS/LIS '93 Conference Proceedings*, pp.778-787.
- (5) Wong, D.W.S. and C.V. Wu. 1995. Spatial Metadata for Aggregated Spatial Data. *Proceedings, Geoinformatics '95 - Hong Kong*, pp. 721 - 727.
- (6) Wong, D.W.S. 1995. Evaluating Spatially Aggregated Data for Socioeconomic/Policy Analysis in GIS. *GIS/LIS '95 Conference Proceedings*, pp. 1037-1045.
- (7) Wong, D.W.S. and W. Chong.\* 1996. ARC/INFO and S-PLUS for Segregation Analysis. *ESRI Annual User Conference Proceedings, 96* (The organizer accidentally left out the paper in the proceedings, but was accepted for publication).
- (8) Symanzik, J., D. Wong, J. Wang, D. B Carr, T. J. Woodruff, and D. A. Axelrad. 1999. Web-Based Access and Visualization of Hazardous Air Pollutants. *Proceedings of the 1998 GIS in Public Health Conference*. (<http://www.ergweb.com/>)
- (9) Chiu, L., N. Pollack, G. Serafino, W. Teng, and D. Wong. 1999. Disseminating National Aeronautics and Space Administration (NASA) Earth Remotely Sensed Data to the Agriculture and Natural Resource Management Communities. *Proceedings, World Multiconference on Systemics, Cybernetics and Informatics and the 5<sup>th</sup> International Conference on Information Systems, Analysis and Synthesis*, Vol. 2, pp. 151 -155.
- (10) Kafatos, M., R. Yang, D. Wong, and X. S. Wang. 1999. Earth Observing and Distributed Data Information Systems for Earth Systems Science. *Proceedings of the International Symposium on Digital Earth*, Vol. I, pp. 143-152.
- (11) Symanzik, J., D. B. Carr, D. A. Axelrad., J. Wang, D. Wong and T. Woodruff. 1999. Interactive Tables and Maps - A Glance at EPA's Cumulative Exposure Project Web Page. *American Statistical Association 1999 Proceedings of the Section on Statistical Graphics*, pp. 94-99.

- (12) Pollack, N., W. Teng, L. Chiu, G. Serafino, and D. Wong. 2000. Operational Production and Distribution of GIS-Compatible Remotely Sensed Data to Facilitate their Use. *Proceedings, ASPRS 2000 Conference*.
- (13) Lee, J. and D. Wong. 2000 Modeling Spatial Structure of Residential Development with ArcView GIS. *Proceedings, ESRI User Conference 2000*.
- (14) Wong, D. W. 2001. Desktop and Internet GIS Development for Spatial Segregation Analysis. *Proceedings, ESRI User Conference 2001*.  
(<http://www.esri.com/library/userconf/proc01/professional/papers/pap275/p275.htm>)
- (15) Yang, C., Kafatos, M., Wong, D., Yang, R., and Y. Cao.\* 2004, GridGIS: A next Generation GIS, *CITSA 2004*, Jul. 21-25, Orlando, FL, pp.22-27.
- (16) Wong, D.W., F. Camelli, and M. Sonwalkar.\* 2007. Integrating computational fluid dynamics (CFD) models with GIS: an evaluation on data conversion formats. *Proceedings, SPIE*, Vol. 6753, DOI: 10.1117/12.761763
- (17) Doctor, K.Z.\*, Doctor, D. H., Kronenfeld, B., Wong, D.W.S., D.K. Brezinski. 2008. Predicting sinkhole susceptibility in Federick Valley MD, using geographically weighted regression. *Proceedings of the 11<sup>th</sup> Multidisciplinary Conference: Sinkholes and the Engineering and Environmental Impacts of Karst* (LB Yuhr, EC Alexander, Jr. and BF Beck, eds.) *Geotechnical Special Publication #183*, Am. Society of Civil Eng, 243-256
- (18) Torrieri, N., D. Wong, and M. Ratcliffe, 2011, Mapping American Community Survey data. *Joint Statistical Meeting (JSM) Proceedings*, Section on Survey Research Methods, Alexandria, VA: American Statistical Association, pp. 1089 – 1100.
- (19) Sun, M.\*, D. W. Wong, and B. Kronenfeld, 2012, Accommodating data reliability in determining map classes: a heuristic approach. *Proceedings – AutoCarto*, Columbus, OH, September 16-18.2012

### **Technical Reports:**

- Geographical Analysis of Society Membership*, report submitted to Virginia Society of Enrolled Agents (VaSEA), June, 1995, 42 pages.
- Developing a Prototype Procedure to Disseminate Remotely Sensed Data from NASA Recent Missions in GIS Formats*, report submitted to NASA/GSFC Digital Active Archive Center (DAAC), February, 1999, 20 pages.
- Total Road Mileages for 162 Selected U.S. Counties*, a technical report submitted to Potomac Capital Investment Corporation, March, 2000, 15 pages.
- Examination of Risk Factors for Respiratory Effects in Children: Use of NHANES-III Respiratory Health and EPA Air Monitoring Data*, an EPA-NCEA report, by S. A. Perlin, C. Chapman, L. Yuan, and D. W. S. Wong, 2002.
- Condition of Nursing and Nursing Education in the Commonwealth*, a report submitted to the State Council of Higher Education (SCHEV), Commonwealth of Virginia, January 28, 2004 (A contributor of the report)
- Changing local segregation of selected U.S. metropolitan areas between 1980 and 2000*, a report submitted to the Department of Housing and Urban Development (HUD), July, 2006, 78 pages.
- Evaluation, Verification, and Validation of the Earth Science Gateway*, a report submitted to Myra Bambacus, NASA ASP/GIO, Feb, 2008, 12 pages plus 33 pages of appendix (with Jing Li).

**Book Reviews:**

- Spatial analysis and planning under imprecision* by Y. Leung: reviewed for *Environment and Planning A*, 1990, 22:425-427.
- Geographic Information Systems: An Introduction* by J. Star and J. Estes: reviewed for *Geo Information Systems* July/August issue, 1992, p.80.
- Spatial Analytical Perspectives on GIS* by M. Fischer, H. J. Scholten and D. Unwin (eds): reviewed for *Transactions in GIS*, 1999, 3(1): 73-75.
- Segregation in Cities* by David H. Kalplan and Steven R. Holloway: reviewed for *Urban Geography*, 2000, 21(8): 765-767.
- Modelling Scale in Geographical Information Science* by N. J. Tate and P. M. Atkinson: reviewed for *International Journal for Geographical Information Science*, 2004, 18(1): 99-106.
- Concepts, Methods and Practical Applications in Applied Demography: An Introductory Text* by Richard K. Thomas: reviewed for *Spatial Demography*, 2019. DOI: 10.1007/s40980-019-00047-1

**Software Reviews:**

- SL-MICRO: Statistical Language for microcomputer reviewed for *The Professional Geographers* 1991, 43(2):238-239.
- TransCAD: Transportation Workstation Software reviewed for *The Professional Geographers* 1992, 44(1):107-108.
- Maptitude: A Desktop Geographic Information System reviewed for *The URISA Journal*, 1996, 8(2):105-108.

**Special Publications:**

- Wong, D. W. 2007, Population growth as a driving force of global and environmental changes, *Global Studies Review*, Fall. (<http://cgs.gmu.edu/publications/oldgsr/3.3.pdf>)
- Wong, D. W. 2009, GIS for Sustainability: Are we going around a circle? *GIS Development*, February, Vol.13, Issue 2, p. 48.
- Wong, D. W. 2012, Using ACS Data for Geographical Research: A Methodological Perspective. In the *Case Studies/Agenda Book*, Workshop on the Benefits (and Burdens) of the American Community Survey, Chapter 23, pp. 86 – 89.

**Patent:**

- U.S. Letters Patent Number: US 7,725,529 B2, May 25, 2010
- Application title: Geographic Information System (application # 10/989,640)
- Inventors: Chaowei Yang, Menas Kafatos, David W. Wong, Henry D. Wolf, Ruixin Yang

**II. RESEARCH AND CONTRACTS FUNDING SUPPORT** (PI was D. Wong if not specified)

*Extramural*

Over \$5.5M in total, including \$1.2M for equipment and \$2.9M for contracts

**Title:** A Computer-Aided Design (CAD) Laboratory for the Undergraduate Curriculum in Cartography and Spatial Analysis (November, 1990)

Sponsor: Yankee Ingenuity Initiative, Elias Howe, Public College and University Grants, Department of Higher Education, State of Connecticut (\$45,000)

PI: Robert Cromley, Co-Is: David Wong, Robert Andrle

**Title:** The modifiable areal unit problem and location-allocation analysis (June, 1991)

Sponsor: National Center for Geographic Information and Analysis, State University of New York at Buffalo (\$3000)

**Title:** Integrating Geographic Information Science and Technology into the Undergraduate Geography Curriculum (June, 1992)

Sponsor: National Science Foundation (\$26,209)

PI: Robert Cromley, Co-Is: Robert Andrle, David Wong, William Berentsen, Ellen Cromley

**Title:** A Spatial Analysis on Course Enrollment for the Virginia Society of Enrolled Agents (August, 1994)

Sponsor: Virginia Society of Enrolled Agents (\$2800)

**Title:** An Hypermap Learning Environment: An Ideabase Resource for Improving the Understanding of Urban Landscapes (March, 1995)

Sponsor: US Department of Education, Fund for Improvement on Post-Secondary Education (FIPSE), subcontracted from Geography Department, University of Maryland, College Park (\$49,492, GMU portion only)

PI: Derek Thompson

**Title:** Tools and Methodologies for Spatial Analysis of Housing Data (June, 1997)

Sponsor: US Department of Housing and Urban Development (HUD) (\$14,237-GMU portion)

Co-PIs: Derek Thompson, University of Maryland, College Park, Wayne Sherwood, Sherwood Research Associates, Inc.

**Title:** Hierarchical Clickable Micromaps in the GPL Environment for the Communication of Geographically Referenced Statistical Data ( April, 1998)

Sponsor: U. S. Environmental Protection Agency (\$50,000)

PI: Juergen Symanzik, CSI, GMU, Faculty Researchers: Daniel Carr and David Wong

**Title:** Disseminating TRMM data to GIS Communities - phase I (June, 1998 - August, 1998)

Sponsor: NASA, Goddard DAAC (through CESOR-DAAC corporate agreement) (\$9000)

PI: David Wong, Faculty Researcher: Sheryl Beach, RA: Kevin Matthews  
**Title:** Disseminating TRMM data to GIS Communities - phase II (Sept - Dec, 1998)  
Sponsor: NASA, Goddard DAAC (through CSI CESOR GMU-DAAC corporate agreement)  
(\$10,243 plus 1 course buyout for the PI and wages for RA)

**Title:** Implement and Evaluate Spatial Segregation Using GIS (February, 1999)  
Sponsor: National Institute of Child Health and Human Development, NIH (\$112,663)

**Title:** Road Database: Compilation and Quality Assurance (September, 2000)  
Sponsor: PB Alltech, Inc. (\$6,003)

**Title:** A Preliminary Study on Re-evaluating Segregation Level in the U.S. (January, 2001)  
Sponsor: The Russell Sage Foundation, The Presidential Authority Awards (\$34,837)

**Title:** Enhance Data/Model Management, Analysis, and Delivery (March 15, 2001)  
Sponsor: Economic Research Service, USDA (co-op agreement) (\$42,698)

**Title:** Enhance Data/Model Management, Analysis, and Delivery (Oct 23, 2001 – 2004)  
Sponsor: Economic Research Service, USDA (co-op agreement) (\$364,224)

**Title:** Enhance Data/Model Management, Analysis, and Delivery: Issues on homeland security  
(May, 2002 - 2005)  
Sponsor: Economic Research Service, USDA (co-op agreement) (\$810,000)

**Title:** Sea Ice Extent Analysis Using Geographic Information Systems and Remote Sensing  
Algorithm Sensitivity Study (September 2003 – Aug 2006)  
Sponsor: National Ice Center/ NOAA (Co-op agreement) (\$250,000)  
PIs: David Wong and Long Chiu

**Title:** Earth Data Exchange Portal (EDEP) (April 2003)  
Sponsor: Unidata (\$12,500)  
PI: Phil Yang, Co-Is: David Wong, Ruixin Yang, and Long Chiu

**Title:** GIS Software Grant from Intergraph (May 2003)  
Sponsor: Intergraph, GIS software (total worth: \$469,000)  
PI: David Wong and Phil Yang

**Title:** Higher Education Grant (June, 2003)  
Sponsor: Virtual Learning Systems Inc.  
Granted: software and technical support worth \$500k+ for research, development and  
education on GIS algorithms, Land Cover/Land Use, Data Systems.  
PIs: Phil Yang and David Wong



**Title:** Building an Interoperable Webmapping Portal for Middle Atlantic Region (Sept 2003)

Sponsor: USGS/FGDC (\$24,993)

PI: Phil Yang, Co-I: David Wong

**Title:** Changing local segregation of selected U.S. metropolitan areas between 1980 and 2000 (May 2004)

Sponsor: Department of Housing and Urban Development (HUD) (\$39,994)

**Title:** Improved Web Mapping Infrastructure and Data Visualization: Tool Integration with Databases (Sept 2004 – Sept 05)

Sponsor: USDA/Economic Research Service (\$4,500)

**Title:** AMEC/Graduate Research Interns (June 1, 05 – Dec 30, 05)

Sponsor: AMEC (\$42,900)

**Title:** GIS/GPS and Related Application Support and Analysis (June 1, 05 – Aug 24, 2007)

Sponsor: Huntley, Nyce & Associates, Ltd (\$60,037)

**Title:** Building Transportation Framework Service (Sept 05 – Dec. 06), NSDI Cooperative Agreement Program (CAP)

Sponsor: USGS, NSDI (\$49,799)

PIs: Chaowei Yang and David Wong

**Title:** SUN/ITU Grid Computing Award (SUN rack and Servers) (Summer 2006)

Sponsor: SUN and ITU/GMU (: \$34,818 worth of equipment)

PIs: Chaowei Yang and David Wong

**Title:** Graduate GIS Interns Support for Eastern Mineral Resources Team, Eastern Region of USGS (Sept 17, 2007 – Sept 16, 2008)

Sponsor: USGS, National Center (\$69,500)

**Title:** Racial Segregation, Social Context, and Health Changes among Older Adults (2008-2010)

Sponsor: NIH (\$60K to D. Wong)

PI: Joseph Sudano, Case Western Reserve University; Consultant: Wong

**Title:** Initiation and Continuation of Drinking-and-Driving Behavior (2007-2012)

Sponsor: NIH (\$15K to D. Wong)

PI: William F. Wieczorek, Buffalo State College; Consultant: Wong

**Title:** Basic Ordering Agreement for Student Services Opportunities with the USGS (September, 2008 – July 2017)

Sponsor: USGS (awarded: \$1.057M; expenditure: \$948K, supporting over 20 student interns)

**Title:** GIS Tools for Mapping American Community Survey Estimates and Data Quality Information (September 1, 2010 – June 30, 2012)

Sponsor: U.S. Bureau of the Census (\$83,386)

**Title:** Acquisition of a Light Detection and Ranging (LiDAR) Scanner System (July, 2012)  
Sponsor: NSF (\$200,775)

PIs: Jyh-Ming Lien, Jim Chen, Jana Kosecka, David Wong and Fernando Camelli

**Title:** Enhancements to GIS Tools and Methods for Mapping American Community Survey  
Estimates and Data Quality Information (September 4, 2012 – June 30, 2014)

Sponsor: U.S. Bureau of the Census (\$139,770)

**Title:** Uncertainty in Spatial Data: Identification, Visualization and Utilization (September,  
2014 – August 2017) (R01HD076020-01A1)

PI: David Wong, Daniel Griffith (UTD), Daniel Carr (GMU), Yongwan Chun (UTD)

Sponsor: NICHD/NIH (requested: ~\$1M, GMU portion: ~\$495K)

**Title:** Mapping Colonial Justice in Early 20th Century Hong Kong (1900-1941): A Historical  
GIS Study (January, 2015 – December 2017)

PI: Michael Hoi-kit Ng, Co-I: David Wong, Wilson Wai-shun Chow, Billy K. L. So

Sponsor: Research Grants Council, HKSAR (Requested: ~ HK\$2.6M; granted: \$HK\$978,988)

### *Intramural*

**Title:** A Spatial Decision Support System for a Home-Delivered Meals Program (Feb, 1991)

Sponsor: University of Connecticut Research Foundation Faculty Research Grant (\$7642)

Co-PIs: Judith Meyer and David Wong

**Title:** Spatial Interaction and Boundary Effect (February, 1992)

Sponsor: University of Connecticut, Research Foundation Faculty Research Grant (\$2500)

**Title:** The Modifiable Areal Unit Problem approach to the poverty problem-a scale  
analysis of the poor (October, 1992)

Sponsor: University of Connecticut, Research Foundation Faculty Research Grant (\$8445)

**Title:** Exploring the World in GIS (February, 1994)

Sponsor: CAS Instructional Development Program, GMU (\$2000)

**Title:** Does Segregation Level Change with Spatial Scale? A GIS Analysis (August, 1995)

Sponsor: CAS Graduate Research Assistantship Proposal Competition, GMU (0.5 GRA)

**Title:** Using Hypermedia Newspaper for World Geography Education (June, 1996)

Sponsor: CAS Curriculum Development, and Instructional Development Office, GMU (\$2800  
and a computer)

**Title:** Ethnic Diversity and Social Integration of Chinese Population (June, 1997)

Sponsor: GMU International Incentive Grants program (\$1000)

**Title:** Ethnic Diversity and Segregation in China (August, 1997)

Sponsor: CAS Graduate Research Assistantship Proposal Competition, GMU (0.5 GRA)

**Title:** Developing Analytical IT skills in World Regional Geography Course (October, 1999)

Sponsor: CAS, Technology Across Curriculum program (\$2000 stipend and TA support)  
\* The course won the College of Arts and Sciences Best Use of IT award in Innovation 2001

**Title:** Exploring the use of Internet GIS for introductory GIS course (October, 2000)  
Sponsor: CAS, Technology Across Curriculum program (GIS software and TA support)  
PIs: Sheryl Beach, Christine Drennon, and David Wong

**Title:** Land Use Change, Climatic Variability, and Freshwater Quality (January, 2001)  
Sponsor: the Provost's office interdisciplinary program, GMU (Graduate Research Assistant)  
PIs: R. C. Jones, Tom Dietz and David Wong

**Title:** Bringing Together Computational Fluid Dynamics Models and Geospatial Modeling (June 2009-May 2011)

Sponsor: College of Science, Interdisciplinary Seed Grants (\$200K)  
PIs: Fernando Camelli, Matthew Rice, David Wong, Chaowei (Phil) Yang, Rainald Löhner

**Title:** Analysis of Pedestrian-and Bicycle-Motor Vehicle Crashes in the Fairfax County Region (Sept 2009 – Oct 2010)

Sponsor: Mason-Inova Life Sciences Research Collaboration Fund (\$10,000)  
PIs: Edmund Zolnik, David Wong (GMU), Ann Rizzo and Linda Robinson (Inova)

**Title:** Build High Quality 3D Urban Models Using Light Detection and Ranging Sensor (August 2012)

Sponsor: Seed Grants, Vice-President for Research, GMU (\$5,000)  
PIs: David Wong, Fernando Camelli, Jyh-Ming Lien

**Title:** A Comparative Spatiotemporal Analysis of Population Dynamics: An initial study of Hong Kong and Shanghai (March 2014 – September 2015)

Sponsor: Seed Funding Programme for Basic Research for New Staff, The University of Hong Kong, University Research Committee (HK\$120,000 + \$50,000 match from Department)  
PI: David Wong

### **Students receiving external funding support:**

Wesley Wills (Geography)  
Yingwu Gao (Geography)  
George Kramer (Geography)  
Yingqi Tang (SCS)  
Mukul Sonwalkar (ESGS)  
Min Sun (GGS)

Wing Chong (Geography)  
Kevin Matthews (Geography)  
Sarah Steerman (Geography)  
George Lu (ESGS)  
Jing Li (GGS)

### **III. PRESENTATIONS**

#### **Special Presentations:**

- “An Emergency Response and Assessment System Coupling GIS with Atmospheric Hazard Prediction Models” with Zafer Boybeyi, Chaowei Yang, John Qu, Ruixin Yang, and Menas Kafatos. University Consortium for Geographic Information Science, Congressional Breakfast Briefing, Rayburn Building, Capitol Hill, Washington, DC., February 5, 2004.
- “GeoInformation Technologies Supporting Disaster Monitoring and Management: Related Activities at George Mason University” with contributions from Z. Boybeyi, G. Cervone, J. Qu, R. Singh, D. Sun, and P. Yang. Luncheon Keynote Address, GeoInformatics 2005 Conference, Ryerson University, Toronto, Aug 17-19, 2005
- “Conceptual and Operational Issues in Incorporating Segregation Measurements in Hedonic Price Modeling” Invited participant (11 international scholars/researchers) in the International Symposium: Hedonic Methods in Real Estate, June 27 – 30, 2007 in Geneva, Switzerland; sponsored by Swiss Academy of Humanities and Social Sciences and Swiss National Science Foundation. All expenses were paid by the organizer.
- “Measuring Segregation: Going Beyond the Residential Space and Ecological Approach?” with Shih-Lung Shaw. Invited participant (13 international scholars/researchers) in New Frontiers in the Field of Segregation Measurement and Analysis, July 1 – 6, 2007 in Centro Stefano Franscini, Monte Verita Hill, Ascona, Switzerland; sponsored by Swiss Federal Institute of Technology in Zurich. All expenses paid by the organizer.
- “Geographical Modeling: Discrete vs. Continuous Space, Global vs. Local Models, and Ecological vs. Individual Approaches.” Invited lecture for the Distinguished Baptist University Geographer Academic Lecture, April 10, 2008, Department of Geography, Hong Kong Baptist University, Hong Kong.
- “Mapping American Community Survey Data” with Nancy Torrieor and Min Sun. Invited talk for the Committee on Population Statistics, Population Association of America and Population Reference Bureau, Washington, DC, September 30, 2011.
- “From Aspatial to Spatial, from Global to Local, from Ecological to Individual: A Progressive Research Agenda for Measuring Racial-Ethnic Segregation” Invited to present at the Conference on Segregation: Measurement, Causes, and Effects. Organized by Sonia Jaffe and Steven N. Durlauf, under the Inequality: Measurement, Interpretation, and Policy Network, Institute for New Economic Thinking, University of Chicago, February 2, 2013, Chicago, IL.

**Invited Presentations:**

- "A Spatial Decision Support System (SDSS) Approach to Evaluate the Efficiency of a Meals -on-Wheels Program" Stockton State College, Environmental Studies Program, March 11, 1993, Pomona, NJ.
- "Spatial Indices of Segregation" Hong Kong Baptist College, Department of Geography, May 25, 1993, Hong Kong.
- "Cartographic vs. Statistical Views on Spatial Data Quality" USGS, Reston, VA, Dec. 7, 1994.
- "Scale and Spatial Homogeneity: Data Quality and Ethnicity Issues", Department of Geography, University of Maryland, College Park, November 2, 1995.
- "Spatial Data Analysis and GIS: Socioeconomic and Housing Application" U.S. Department of Housing and Urban Development (HUD), Washington, DC., October 16, 1996.
- "Ethnic Diversity of Chinese Population" Center for Asia Pacific Economic Cooperation (CAPEC) Biweekly Faculty Seminar, George Mason University, VA, October 30, 1997.
- "Scaling Behavior of Segregation Index - An Analysis using Fractals" United States Geological Survey (USGS), Reston, VA, January 7, 1998.
- "Using GIS to Measure Spatial Correspondence with the Standard Deviation Ellipse", National Center for Health Statistics (NCHS), Hyattsville, MD, February 10, 1999.
- "From aspatial to spatial, from global to local: a case of segregation study", CSI/Statistics Colloquium Series, George Mason University, VA, February 16, 2001.
- "Spatial segregation and GIS", Geographic Information System and Spatial Analysis Workshop, Population Association of America 2001 Annual Conference, George Mason University, VA, March 28, 2001.
- "Using Geographic Information Technology for Environmental Risk Assessment: A Framework and Fundamental Aspects", National Conference on Biological Variability in Children and Implications for Environmental Risk Assessment: New Perspectives on the Roles of Ethnicity, Race and Gender, University of Maryland, MD, March 3-6, 2002.
- "Spatial Dimension of Segregation: Scale, Spatial Structure, Heterogeneity and Residential Preferences", Department of Geography, University of Maryland, College Park, MD, March 14, 2002.
- "Several Research Issues on the Integrated Sea Ice Analysis System," with Long Chiu and Ruixin Yang, Operational Sea Symposium by National Ice Center, NOAA, Solomons, MD, Sept. 18-19, 2002.
- "What Color is Segregation? Changing Spatial Segregation of Asian: 1980-2000" Race/Ethnicity and Place Mini-Conference, The 25<sup>th</sup> Annual Applied Geography Conference, Binghamton, NY, October 23-26, 2002.
- "Spatial Decomposition of Segregation Indices: A Framework toward Measuring Segregation at Multiple Levels," Department of Geography, University of Connecticut, Storrs, CT, October, 31, 2002.
- "Measuring Spatial Segregation with GIS: the SEG program in ArcView," Population Science Workshop sponsored by Center for Spatially Integrated Social Science (CSISS) and Population Research Institute, Pennsylvania State University, State College, PA, May 19-23, 2003.
- "School of Computational Sciences and the Future of GIS and Remote Sensing," with Phil Yang, GIS Day, George Mason University, Fairfax, VA, November 19, 2003.

- “The MAUP: A Universal Problem without a Universal Solution?” Department of Crop and Soil Science, Cornell University, Ithaca, NY, April 1, 2004.
- “State of the Research on the MAUP in related to Measuring Segregation,” Department of Geography, Kent State University, Kent, OH, April 23, 2004.
- “Measuring the Spatial Extent of Local Segregation: Exploring Local Variability,” 2004 Conference on Race, Ethnicity & Place, Howard University, Washington, DC, September 15-17, 2004.
- “GIS as a Media,” with Phil Yang, 2004, GIS Day, George Mason University, Fairfax, VA, November 17, 2004.
- “Spatial Dimensions in Measuring Segregation,” Department of Geography, University at Buffalo, Buffalo, NY, Aug 16, 2005.
- “From Global to Local: Spatial Interaction and Infectious Diseases Dispersion,” Conference on Avian Flu: The Threat of Pandemics in the Asia-Pacific Region and the Challenges of U.S. Preparedness, George Mason University, Fairfax, VA, November 17, 2006.
- “Measuring Segregation: From Spatial to Local and Individual,” S4: Spatial Structure in the Social Sciences Colloquia Series, Brown University, Providence, RI, February 20, 2009
- “GIS: Guilty of committing ecological fallacy?” The American Political Science Association meeting, Washington, DC, September 1, 2010.
- “Improving the quality of historical GIS framework data: An example of Republican Beijing” with Billy K. L. So, P. Zhang, and H. Lin. In International Conference on Urban Cultural Change in Republican China (1910s-1940s): Dialogue between Cultural Narrative and Historical GIS, Sept 18-20, 2010, Chinese University of Hong Kong, Hong Kong
- “Mapping the American Community Survey Data to Support Spatial Analysis and Decision Making” with Min Sun, in Cartography/Mapping Working Group, U. S. Census Bureau, October 4, 2010.
- “What can we do with errors in spatial data? An example using Census ACS data”, presentation given to New York City Planning Department, New York Times, and CUNY Graduate Center, at CUNY Graduate Center, NYC, August 19, 2011.
- “Handling Spatial Data Quality Information in GIS: A Case of Using the American Community Survey (ACS) Data”, presentation given at the National Center Institute (NCI), National Institute of Health (NIH), Rockville, MD, October 2, 2012.
- “Mapping (with) Data Quality (Information) (Again)?” Sun Yat-Sen (Zhongshan) University, Guangzhou, China, June 4, 2013.
- “From aspatial to spatial, from global to local: A progressive agenda for measuring segregation.” Hong Kong Baptist University, Hong Kong, June 7, 2013.
- “Incorporating Data Quality Information in Choropleth Mapping” Institute of Space and Earth Information Science, Chinese University of Hong Kong, Hong Kong, October 4, 2013.
- “Map Classification as an Approach to Handle Data Quality Issues” Department of Geography and Resource Management, Chinese University of Hong Kong, February 13, 2014
- “Does a map tell us “the truth, the whole truth, nothing but the truth...?” A look from the attribute accuracy perspective” School of Earth Science and Resources, Chang’an University, Xi’an, China, October 16<sup>th</sup>, 2014
- “How ethnically diverse can a “Chinese city” be? A case of Hong Kong” Department of Geography, School of Tourism, Shanghai Normal University, Shanghai, China, June 5, 2015

- “Segregation measurement: Challenges and unresolved issues” Migrants in the City: New Dynamics of Migration in Urban Settings – An Interdisciplinary and international conference. Cutler’s Hall, Sheffield, October 12-13, 2015.
- “A heuristic multi-criteria classification approach incorporating data quality information for choropleth mapping” School of Economic, Political and Policy Sciences, University of Texas – Dallas, January 29, 2016.
- “Mapping with Confidence: A Heuristic Approach to Determine Classes in Maps” Department of Geography, University of Hong Kong, Hong Kong, May 19, 2016.
- ‘How to lie “less” with maps? Mapping with data reliability information’ National Cancer Institute, July 13, 2016.
- ‘How “dependent” are we? An exploratory spatiotemporal analysis of the youth and elderly populations in the U.S.’ Department of Sociology and Anthropology, George Mason University, October 18, 2017.
- ‘How “dependent” is the population in China? An exploratory spatiotemporal analysis of the youth and elderly populations in China.’ with Shiyang Ruan. Department of Geography, University of Hong Kong, Hong Kong. September 26, 2018.
- “SEER\*CMapper: Making Choropleth Maps with data reliability information.” National Cancer Institute, July 19, 2019.
- “How does the (un)reliability of spatial data complicate our life? Illustrations with choropleth mapping and detection of spatial autocorrelation” Department of Geography, University at Buffalo, November 1, 2019.
- “Measuring segregation: Is Geography a “curse” or leverage?” Department of Geography, University of Wisconsin-Milwaukee, October 30, 2019.

**Conference Posters, Presentations and Panels (from 2000 onward only):**

- “Expanding the Use of GES DAAC Remotely Sensed Data by the GIS Community,” with N. Pollack, W. Teng, L. Chiu, and G. Serafino. A poster presented at the Association of American Geographer Annual Meeting, April 4-8, 2000, Pittsburgh, PA.
- “Changing Patterns of Spatial Concentration of the Asian Population in the United States,” with Max Lu. Association of American Geographer Annual Meeting, April 4-8, 2000, Pittsburgh, PA.
- “Spatial and Traditional Segregation Measures: Preliminary Analysis.” 2000 Annual Meeting, Mid-Atlantic Division of the Association of American Geographers. October 6, 2000, Washington, DC.
- “Modeling Spatial Segregation in GIS” GIScience 2000, Savannah, GA. Oct. 28-31, 2000.
- “Comparing Traditional and Spatial Segregation Measures: A Scale-Effect Perspective” Association of American Geographer Annual Meeting, February 27 - March 3, 2001, New York, NY.
- “A Comparison of Traditional and Spatial Measures of Segregation: Some Empirical Findings” Population Association of America 2001 Annual Meeting, March 29-31, 2001, Washington, DC.
- “Exploring Relationships between the Global and Regional Measures of Spatial Autocorrelation” with Daniel A. Griffith and Thomas Whitfield, The 48<sup>th</sup> North America Meetings of the Regional Science Association International, Charleston, SC, Nov 15-17, 2001



- “Changing spatial segregation from 1980 to 2000 in selected metropolitan areas” Association of American Geographer Annual Meeting, March 19-23, 2002, Los Angeles, CA.
- “Formulating a Spatial Monitoring Strategy for Mosquito Control: Identifying Vulnerable Population,” with Thomas Allen, Geoinformatics 2002, June 1-3, 2002, Nanjing, China.
- “GeoMedia in education of Distributed GIS” with Chaowei Yang, GeoSpatialWorld’2003, May, 19-21, 2003, New Orleans.
- “Middle Atlantic Geographic Service Center” with Menas Kafatos, Chaowei Yang, and Ruixin Yang, 2003 Annual Virginia GIS Conference, October 27-28, 2003, Richmond, Virginia.
- “Formulating a General Spatial Segregation Measure” 50<sup>th</sup> Annual North American Meetings of the Regional Science Association International, November 20-22, 2003, Philadelphia, Pennsylvania.
- “A Density Surface-based Approach to Measuring Spatial Segregation” with David O’Sullivan. Association of American Geographer Centennial Meeting, March 14-19, 2004, Philadelphia, Pennsylvania.
- “Evaluating and Visualizing Sea Ice Data” with Yingqi Tang. Towson University GIS Conference, March 22-23, 2004, Towson, Maryland.
- “Using Remote Sensing to enhance locating population in space and time for emergency response and risk assessment” with Ying Cao and Chaowei (Phil)Yang. The 8<sup>th</sup> GMU Conference on Atmospheric Transport and Dispersion Modeling, July 13-15, 2004, Fairfax, Virginia.
- “Geospatial Information Rapid Service System” with C. Yang., Z. Boybeyi, M. Kafatos, D. Wong & R. Yang. The 8<sup>th</sup> GMU Conference on Atmospheric Transport and Dispersion Modeling, July 13-15, 2004, Fairfax, Virginia.
- “Monocentric or Polycentric Cities? An Exploration of the Largest Metropolitan Areas in the U.S. Using Spatial Autoregressive Population Density Functions”, with Daniel A. Griffith, North America Meeting, Regional Science Association International, Seattle, WA, November 11-13, 2004
- “Integrating Atmospheric Dispersion Model with GIS for Exposure Analysis”, with Zafer Boybeyi, 9<sup>th</sup> Annual George Mason University Conference on Atmospheric Transport and Dispersion Modeling, Fairfax, VA, July 13-15, 2005.
- “XML based Spatial-Temporal Data Mining and Dissemination of Sea Ice Data,” with Yingqi Tang, Association of American Geographers Meeting, Denver, CO, April 5-9, 2005
- “Spatial Autoregressive Model Descriptions of Population Density for the Twenty Largest US Metropolitan Areas,” with Daniel A. Griffith, Regional Science Association International North America Meeting, Las Vegas, NV, Nov 9 – 11, 2005.
- “Lowering in segregation level? Where?” Association of American Geographers Meeting, Chicago, IL, March 7 – 11, 2006
- “Vulnerability assessment of rainfall-induced debris flow” with George Lu and Long Chiu, AGU Joint Assembly, 23-27 May, 2006, Baltimore, MD.
- “Measuring Spatial Separation - A Distance-Based Approach” Association of American Geographers Meeting, San Francisco, CA, April 18-21, 2007.
- “Integrating Computational Fluid Dynamics (CFD) Models with GIS: An Evaluation on Data Conversion Formats” with Fernando Camelli and Mukul Sonwalkar, The 15<sup>th</sup> International Conference on Geoinformatics (Geoinformatics’ 2007), Nanjing, China, May 25-27, 2007

- “Coupling computational fluid dynamic models (CFD) and geographic information systems (GIS)” with F. Camelli, M. Sonwalkar and R. Löhner. The 11th Annual George Mason University Conference on Atmospheric Dispersion Modeling, Fairfax, VA, July, 2007.
- “Evolving Population Density Structure of Major U.S. Metropolitan Areas Between 1980 and 2000” with Daniel Griffith, Regional Science Association International North American Meeting, Savannah, GA, Nov 7-11, 2007.
- “Racial Residential Segregation and Changes in Health among Older Adults” with Joseph Sudano, Adam Perzynski, Natalie Colabianchi and David Litaker, 136<sup>th</sup> American Public Health Association Annual Meeting & Exposition, San Diego, CA, Oct 25-29, 2008
- “Health Effects of the Location Quotient for Residential Segregation on Aging Adults” with Joseph Sudano, Adam Perzynski, Natalie Colabianchi and David Litaker, Race, Ethnicity and Place Conference IV, Miami, FL, Nov 5-8, 2008.
- “Regularity in Population Density at Intra-Urban Scale: Simulating Urban Density Structure” with Jing Li, and Daniel Griffith, 55<sup>th</sup> Annual North American Meetings of the Regional Science Association International, New York, NY, Nov 19-22, 2008.
- “Measuring Segregation: Going Beyond the Residential Space and Ecological Approach?” Association of American Geographers Meeting, Las Vegas, NV, March 22-27, 2009.
- “Effects of Spatial Resolution on Hydrological Modeling” with Jing Li, Association of American Geographers Meeting, Las Vegas, NV, March 22-27, 2009.
- “Vector Pyramid: Organizing Huge Vector Data for Vector-based Geospatial Information Service” with Huayi Wu, Xiaojing Liu and Chaowei Yang, Association of American Geographers Meeting, Las Vegas, NV, March 22-27, 2009.
- “More than one way to skin a cat: Exploring an alternative approach to measure spatial Autocorrelation” 8<sup>th</sup> Workshop on Spatial Econometrics and Spatial Statistics, Besançon, France, June 2-3, 2009
- “An expanded spatial autocorrelation framework to measure spatial patterns,” 57<sup>th</sup> Annual North American Meetings of the Regional Science Association International, San Francisco, Nov 18-21, 2009.
- “Evaluating spatial patterns of racial-ethnic groups from a proximity perspective” Association of American Geographers Meeting, Washington, DC, April 14 – 18, 2010.
- “Distributed visualization of dust storm” with Jing Li, Chaowei Yang, Huayi Wu, Qunying Huang, Association of American Geographers Meeting, Washington, DC, April 14 – 18, 2010.
- “Sustainability of Metro Commuting in Washington, DC Area” with Min Sun, Association of American Geographers Meeting, Washington, DC, April 14 – 18, 2010.
- “Comparison of Methods to Aggregate Points into Neighborhood Areas” with William Wiecezorek and Alan Delmerico, Association of American Geographers Meeting, Washington, DC, April 14 – 18, 2010.
- “Using American Community Survey (ACS) Data in Geographical Research” with Min Sun, The 33<sup>rd</sup> Applied Geography Conference, Fort Worth, TX, October 20-23, 2010.
- “Why Taking the Metro for Commuting in Washington, DC Area?”, with Min Sun, The 33<sup>rd</sup> Applied Geography Conference, Fort Worth, TX, October 20-23, 2010.
- “Incorporating Data Quality Information to Evaluate Spatial Patterns: An Example of Using the American Community Survey Data” Association of American Geographers Meeting, Seattle, WA, April 11-16, 2011.

- “A Visual Analytical System for 3D Spatial Temporal Data Using a Constraint-Based Model” with Jing Li, Association of American Geographers Meeting, Seattle, WA, April 11-16, 2011.
- “Using Statistical Difference as a Criterion to Map the American Community Survey (ACS) Data”, with Min Sun, Association of American Geographers Meeting, Seattle, WA, April 11-16, 2011.
- “Comparison of Clustering of Lattice and Census-based Neighborhood Areas” with William Wieczorek, Alan Delmerico, and Peter Rogerson, Association of American Geographers Meeting, Seattle, WA, April 11-16, 2011.
- “Mapping American Community Survey Data and Beyond” with Nancy Torrieri and Michael Ratcliffe, Joint Statistical Meetings, Miami Beach, FL, July 2, 2011.
- “ArcGIS Extension for Census Mapping” with Min Sun and Nancy Torrieri, ESRI User Conference, San Diego, CA, July 12, 2011.
- “Building Historical GIS Databases: An Example of Studying the Urban Culture of Republican Beijing” with Billy K. L. So, Peiyao Zhang and Hui Lin, The 34<sup>th</sup> Applied Geography Conference, Redlands, CA, October 19-21, 2011.
- “ArcGIS Extension for Handling American Community Survey (ACS) and other Census Data” with Min Sun, The 34<sup>th</sup> Applied Geography Conference, Redlands, CA, October 19-21, 2011.
- “A Constraint-based Approach to Manage 3D Spatial Temporal Data” with Jing Li, in the Association of American Geographers Meeting, New York, NY, February 24-28, 2012.
- “Measuring Local Segregation: a Revisit” in the Association of American Geographers Meeting, New York, NY, February 24-28, 2012.
- “Cartographic Techniques for Communicating Class Separability” with Min Sun and Barry Kronenfeld, in the Association of American Geographers Meeting, New York, NY, February 24-28, 2012.
- “Geographic Frontiers in the Federal Statistical Agencies.” Panelist, in the Association of American Geographers Meeting, New York, NY, February 24-28, 2012.
- “The end of the Segregated Century? Geographers react to recent census analysis.” Panelist in the Association of American Geographers Meeting, New York, NY, February 24-28, 2012.
- “City-Scale Urban Transport and Dispersion Simulation using Geographic Information System Footprints” with Jyh-Ming Lien, Fernando Camelli, Yanyan Lu, in Com.Geo Conference, Reston, Virginia, July 1-3, 2012
- “Transport and Dispersion Simulation in Downtown Oklahoma City and New York City”, with Fernando Camelli and Jyh-Ming Lien, in Technical Posters Session of Com.Geo Conference, Reston, Virginia, July 1-3, 2012.
- “Accommodating Data Reliability in Determining Map Classes: A Heuristic Approach”, with Min Sun and Barry Kronenfeld, in AutoCarto 2012, Columbus, OH, September 16-18, 2012
- “Evaluating the Spatial Patterns of Population using the American Community Survey (ACS) Data”, with Min Sun, in Race, Ethnicity & Place Conference '12, San Juan, PR, October 24-26, 2012.

- “Mapping ACS Data using ArcGIS with Reliability Information - An Update on Development”, with Min Sun, in the Association of American Geographers Meeting, Los Angeles, CA, April 8-12, 2013.
- “A Heuristic Map Classification Method Considering Uncertainty in Attribute Data”, with Min Sun and Barry Kronenfeld, in the Association of American Geographers Meeting, Los Angeles, CA, April 8-12, 2013.
- “Changes in the Spatial Distribution of Floating Population in Shanghai between 2000 and 2010”, with Banggu Liao, in the Association of American Geographers Meeting, Los Angeles, CA, April 8-12, 2013.
- ‘Evaluating the “Geographical Awareness” of Individuals: An exploratory analysis of Twitter data’, with Chen Xu, Chaowei Yang, in the Association of American Geographers Meeting, Los Angeles, CA, April 8-12, 2013.
- “The Dynamics of Segregation and African American Neighborhoods” with Kasim Ortiz, in The First Annual Atlanta Studies Symposium, Atlanta, GA, April 26, 2013.
- “Mapping (with) Data Quality (Information) (Again)?” with Barry Kronenfeld and Min Sun, in the 8<sup>th</sup> International Symposium on Spatial Data Quality (ISSDQ), Hong Kong, China, May 30 – June 1, 2013.
- “Enabling the Use of Data Quality Information in American Community Survey (ACS) Data for Geographical Applications: A Summary of Research Progress” with Min Sun, in the Association of American Geographers Meeting, Tampa, FL, April 7-12, 2014.
- “Using spatial aggregation to reduce sampling error” with Min Sun in the Association of American Geographers Meeting, Tampa, FL, April 7-12, 2014.
- “The Social Spatial Restructure of Shanghai Center City from 2000 to 2010: A comparative factorial analysis” with Banggu Liao, in the Association of American Geographers Meeting, Tampa, FL, April 7-12, 2014.
- “Frameworks for 2D/3D Networks supporting Navigation: A Revisit” with Jyh-Ming Lien, in GeoInformatics 2014 Conference, Kaohsiung, Taiwan, June 25-27, 2014.
- “Who are segregated in an international metropolis? A case of Hong Kong” with Garrett Strang, Alfred Wai-Yin Tang, and Wangke Wu, in the 61st Annual North American Meetings of the Regional Science Association International, Bethesda, MD, Nov. 12-15, 2014.
- “What do we measure in segregation studies? (Who and How are we separated?)” Association of American Geographers Meeting, Chicago, IL, April 21-25, 2015.
- “Spatial aggregation as a means to improve data quality” with Min Sun, in GeoComputation 2015, Dallas, TX, May 20-23, 2015.
- “Aging of Shanghai (2000-2010): A Decomposition Approach Accounting for Migration” with Banggu Liao, The 3rd Conference on China Urban Development, Shanghai, China, June 5-7, 2015.
- “A Heuristic Multi-Criteria Classification Approach Incorporating Data Quality Information for Choropleth Mapping” with Min Sun and Barry Kronenfeld. The 38th Applied Geography Conference, San Antonio, Texas, November 4-7, 2015.
- “Errors in Neighborhood Definition: Can we do Better?” with Min Sun, in American Association of Geographers Annual Meeting, San Francisco, CA, March 29 – April 2, 2016.
- “Are we Stretching our (Spatial) Data?” Spatiotemporal (ST) Symposium: Achievements, Gaps, and Future of Spatiotemporal Studies (a panel). American Association of Geographers Annual Meeting, San Francisco, CA, March 29 – April 2, 2016

- “A Heuristic Multi-Criteria Classification Approach Incorporating Data Quality Information for Choropleth Mapping”. Min Sun, David Wong and Barry Kronenfeld. American Association of Geographers Annual Meeting, San Francisco, CA, March 29 – April 2, 2016.
- “Implicit Visualization of Uncertainty on Health Maps using Cartograms” Barry J. Kronenfeld, David W. Wong, and Min Sun. American Association of Geographers Annual Meeting, San Francisco, CA, March 29 – April 2, 2016.
- “Sensitivity of DBSCAN in Identifying Activity Zones Using Online Footprints” David W. S. Wong and Qunying Huang. Spatial Accuracy Assessment in Natural Resources and Environmental Sciences, Montpellier, July 5-8, 2016.
- “Incorporating Sampling Error Information in Spatial Cluster Identification and Mapping” David W. Wong and Min Sun. American Public Health Association Annual Meeting and Expo, Denver, CO, Oct 29 – Nov 2, 2016.
- “Considering Attribute Error in Spatial Cluster Identification” David W. Wong and Min Sun. American Association of Geographers Annual Meeting, Boston, MA, April 5-9, 2017.
- “A Comparison of Shortest Path Generating Methods for Multi-story Structures” Mengchao Xu and David W. Wong. American Association of Geographers Annual Meeting, Boston, MA, April 5-9, 2017.
- “Mapping with(out) Confidence” David W. Wong and Min Sun. Eastern North American Regional Biometric Society (ENAR) 2017 Spring Meeting, Washington, DC, March 12-15, 2017.
- ‘Can We Map ACS Data with "Confidence"?’ David W. Wong and Min Sun. 2017 American Community Survey (ACS) User Conference, Alexandria, VA, May 11-12, 2017.
- “Comparing implementations of global and local indicators of spatial association” Roger Bivand and David Wong. European Colloquium on Theoretical and Quantitative Geography, York, UK, September 7-10, 2017
- “Exploring Alternatives to Spatial Cluster Detection Methods” 64th Annual North American Meetings of the Regional Association International, Vancouver, BC, November 8-11, 2017.
- “How “dependent” are we? An exploratory spatiotemporal analysis of the youth and elderly populations in the U.S.” with Tyler Myroniuk. American Association of Geographers Annual Meeting, New Orleans, LA, March 21-24, 2018.
- “Mapping SEER data, health data, and data with (un)reliability information.” American Association of Geographers Annual Meeting, Washington, DC, April 3-9, 2019.
- “Spatial interaction of population flows containing uncertainty.” with Yongwan Chun, Daniel A. Griffith. American Association of Geographers Annual Meeting, Virtual, April 7-11, 2021.
- “Changing Segregation of Older Adults in the US: 1990 to 2010.” with Debasree Das Gupta. American Association of Geographers Annual Meeting, Virtual, April 7-11, 2021.

## IV INSTRUCTIONAL ACTIVITIES

### Courses Taught (formal courses):

#### *Graduate level*

Geospatial Science Fundamentals	Geographic Information Systems
Geographic Information Analysis	Quantitative Methods
Advanced Spatial Statistics	Advanced GIS
Algorithms & Modeling in GIS (team-taught)	
Distributed GIS (team-taught)	Spatial Analysis & Modeling of Population
Colloquium in Earth Systems Sciences	
Geography of China	Geographic Thought and Methodology

#### *Undergraduate level*

World Regional Geography	Population Geography
Urban Geography	Economic Geography
Quantitative Methods/Spatial Analysis	
Transportation Geography	
Geography of China	Geographic Information Systems

### New Courses Developed

#### *Undergraduate level*

- Introduction to Geographic Information Systems
- Applied Geographic Information Systems
- GIS Applications in Earth Sciences
- Population Geography/Population Dimension of Global Change (online since 2020)
- Geography of China (online since 2020)

#### *Graduate level*

- Introduction to Geographic Information Science
- Advanced Geographic Information Sciences
- Geographic Information Analysis
- Spatial Data Structure
- Environmental Applications of Integrated Geographic Information Technologies
- Advanced Spatial Statistics
- Spatial Analysis & Modeling of Population
- Digital Image Processing (with Wenli Yang)
- Algorithms and Modeling in GIS (with Chaowei Yang)
- Distributed GIS (with Chaowei Yang)

### Curriculum Development

- GEOG 110 Maps and Mapping (revised with Sheryl Beach and Jeremy Crampton)
- GIS Minor in Geography (proposed with Sheryl Beach, 1998)
- BS Global and Environmental Change (with Menas Kafatos and Sheryl Beach), jointly offered with Environmental Science and Policy, 2006
- MS Earth Systems Science (I was involved in the development of this degree program, 2000)
- MS Geographic and Cartographic Sciences (GECA) (I proposed to change the degree requirement from two term papers into a comprehensive exam for non-thesis option,

and lowered the credit hours required for students choosing the thesis option in order to encourage more students to select the thesis option, 1998.)

MS GECA in NIMA (I was the one initiated the arrangement to offer the GECA program on-site at NIMA, 2000.)

Internal Program Review (I initiated a review of courses offered for the CSI Earth Observing track, 2002.)

Graduate Certificate in Remote Sensing and Image Processing (I proposed this certificate program with premium pricing, 2003.)

Graduate Certificate in Geospatial Intelligence (I provided advice to Dr. Stefanidis)

Ph. D. in Earth Systems and GeoInformation Sciences (I proposed this new Interdisciplinary Ph.D. degree, 2003-04)

### **Master's Students:**

MS students at GMU have the thesis/projects and non-thesis (comprehensive exam) options. I have served on more than 100 committees for non-thesis options. Here I just listed the thesis-option committees.

Paul O'Packi, (U. Connecticut) 1992-1993

Jane derBoghossian, 1994-1995, MS Geographic and Cartographic Science (GECA)

Jeffrey Knight, 1995- 1997 (advisor), MS GECA

Title: Compactness and Voting District Adjustment: An Assessment of Fractal Analysis as in Alternative Measure

Todd Fagen, 2001- 2002 (committee member), MS GECA

Title: A Spatio-Temporal Analysis of Breeding Bird Surveys in Northern Virginia (1997-2001)

Stacie Cayci, 2002- 2005 (advisor), MS GECA

Title: Using GIS to Determine Bus Route Service Cuts and its Impacts on Communities in the Fairfax Connector Network in Fairfax County, Virginia

Matthew Cheyne, 2004-2005 (committee member), MS Earth Systems Science

Title: Spatial Analysis of Impact Craters in North America

Jing Li, 2007-2009 (advisor), MS Earth Systems Science

Title: Effects of spatial resolution of DEMs on hydrological modeling

Howard Tenenbaum, 2008 – 2010 (committee member), MS GECA

Title: High-priced Mortgages by Local Banks, Non-Local Banks, and Mortgage Companies in Metropolitan Areas of the U.S.

Jizhe Xia, 2011-2012 (committee member), MS GECA

Title: Optimizing a spatiotemporal index to support GEOSS Clearinghouse

Erik Seglem, 2017 (committee member), MS Geoinformatics & Geospatial Intelligence

Title: On privacy in spatio-temporal data: user identification using geotagged social media

John Prior, 2019 (advisor), MS GECA

Title: Geo-demographic analysis of the Alabama Black Belt 1910 -2010



Meiliu Wu, 2019 (committee member, external), MS in Cartography and Geographic Information Systems, University of Wisconsin-Madison.  
Title: Human Movement Patterns of Different Racial-Ethnic and Economic Groups in U.S. Top 50 Cities: What Can Social Media Tell Us About Segregation?

**Ph.D. in ESGS: Dissertation Director/Chair**

George Lu, Earth Systems and GeoInformation Sciences, GMU, 2004 – 2007  
Title: The Vulnerability Assessment of Rainfall-induced Debris Flows in Taiwan  
James Falcone, Earth Systems and GeoInformation Sciences, GMU, 2008 – 2010  
Title: A zone-based approach to identifying urban land uses using nationally-available data  
Karen Owen, Earth Systems and GeoInformation Sciences, GMU, 2007 – 2012  
Title: Geospatial and Remote Sensing-based Indicators of Settlement Type – Differentiating Informal and Formal Settlements in Guatemala City.  
Jing Li, Earth Systems and GeoInformation Sciences, GMU, 2007 – 2012  
Title: A Constraint-Based Model for 3D Spatial-Temporal Data Management  
Min Sun, Earth Systems and GeoInformation Sciences, GMU, 2009 – 2014  
Title: Handling Attribute Accuracy in Spatial Data Using a Heuristic Approach  
Kalyn Rossiter, Earth Systems and GeoInformation Science, GMU, 2011 – 2015  
Title: Evaluating Multiple Criteria for (Re)districting  
David Alexander, Earth Systems and GeoInformation Sciences, GMU, 2008 – 2016  
Title: Analyzing the Relationships between Hazard Vulnerability Science and Disaster Management Policy and Practice: A Case Study of Atlantic Hurricanes

**Ph.D. in ESGS or CSI: Committee Member**

Kwang-Su Yang, Computational Sciences and Informatics (CSI), GMU, 1994-1999  
Edward J. Wright, Computational Sciences and Informatics (CSI), GMU, 1996 - 2002  
Owen Keefer, Computational Sciences and Informatics (CSI), GMU, 1999 - 2003  
Hesham El-Askary, Computational Sciences and Informatics (CSI), GMU, 2002 - 2004  
Yasmin Hassan Said, School of Computational Sciences (SCS), GMU, 2005  
John Ashley, School of Computational Sciences, GMU, 2006  
Ying Cao, Earth Systems and GeoInformation Science, 2004 - 2008  
Sam Yongping Yan, Computational Sciences and Informatics (CSI), GMU, 2009 – 2013  
Huilin Wang, Earth Systems and GeoInformation Science, 2011 – 2013  
Steven Quan, Earth Systems and GeoInformation Science, 2018 – 2020  
Danielle Brant, Earth Systems and Geoinformation Science, 2020 - 2020

**Ph.D. in Public Policy: Committee Member**

Peter Arena, School of Public Policy (SPP), GMU, 2004  
Adam G. Yang, School of Public Policy (SPP), GMU, 2002 – 2004  
Dennis Zhao, School of Public Policy (SPP), GMU, 2002 – 2004  
Kimberly Vachal, School of Public Policy (SPP), GMU, 2004-2005  
Lisa Fowler, School of Public Policy, GMU, 2005 – 2006  
Adriana Kocornik-Mina, School of Public Policy, GMU, 2005 – 2007  
Lewis Moore, School of Public Policy (SPP), GMU, 2004- 2008  
Yanchun Liu, School of Public Policy (SPP), GMU, 2005 - 2008

Ting Zhang, School of Public Policy, GMU, 2005 – 2008  
Henry Vega, School of Public Policy, GMU, 2006 - 2010  
Debasree Das Gupta, School of Public Policy, GMU, 2007-2013

**Ph.D. in Environmental Science & Policy: Committee Member**

Alan Rush, Environmental Science and Policy (ESP), GMU, 2001 – 2006  
Rupal Mangukiya, Environmental Science and Policy (ESP), GMU, 2017 - 2020

**Others (PhD committee member, if not specified):**

Linda Henry, College of Nursing and Health Sciences, GMU, 2004 - 2006  
Christine Tedrow, Biodefense, College of Humanities and Social Science, GMU, 2007-2009  
Paul Fernald, Department of Geography, University of Connecticut, 2001 – 2009  
Gyoungju Lee, Department of Geography, University of Buffalo, 2007 (outside reader)  
Kellee White, Department of Epidemiology, School of Public Health, Columbia University, 2008

**PhD and MA Thesis Examiner:**

LAM Wai Keung, Department of Geography, Hong Kong Baptist University (M. Phil), 2009  
(external examiner)  
Kerstin HERMES, Department of Environment and Geography, Macquarie University, 2012  
(external examiner)  
LOW Chien Tat (PhD in Geography, Department of Geography, University of Hong Kong):  
Internal Examiner, 2014  
WONG Paulina Pui Yun (PhD in Geography, Department of Geography, University of Hong  
Kong): Internal Examiner, 2014  
Emil ELGAARD (MA in China Development Studies, Department of Geography, University of  
Hong Kong): Second Examiner, 2014  
Karl Fridrich SCHIEBE (MA in China Development Studies, Department of Geography,  
University of Hong Kong): Third Examiner, 2014  
PAN Wenjun (MA in China Development Studies, Department of Geography, University of  
Hong Kong): Third Examiner, 2014  
ZHANG Wenting (PhD in Geography, Department of Geography and Resource Management,  
The Chinese University of Hong Kong): Second Examiner, 2014  
Asamoah-Peprah, Eugene (M. Phil, Geography), Accra, University of Ghana, 2018. (External  
Examiner)  
Matthew Peng Ming YAP (PhD) The University of Western Australia, 2021. (External  
Examiner)

**V. TRAINING COURSES, WORKSHOPS, AND CONSULTING SERVICES OFFERED  
TO COMPANIES/AGENCIES/ORGANIZATIONS**

1995 September, **Yigyan**, Fairfax, VA (statistics and GIS consultant)  
1995 October, **Nobis Engineering**, Concord, New Hampshire (a two full-day workshop on  
GIS for environmental engineering applications and surveying)

- 1996 September-October, **International Program Center, U.S. Bureau of the Census** (a training workshop on GIS and Census Data for a group of 17 participants from 10 countries over the world)  
**Topics** included in the six-day class are census data and cartographic databases, database design, metadata, cartographic presentation of census statistical data.
- 1997 May - July, **Environmental Protection Agency** (offering GEOG 653 Geographic Information Analysis, a course combining spatial statistics and GIS, to EPA environmental scientists).
- 1997 September- 1998 May, **Ned Levine and Associates, Inc.**, Bethesda, Maryland. (GIS and statistical consultant for a project from U.S. Department of Justice and Baltimore County on crime analysis).
- 1998 January - 1999 February, **Environmental Protection Agency, the Washington DC Center of National Center for Environmental Assessment** (Offering lectures and organizing a seminar series on spatial statistics and GIS).
- 1998 August - 2004, **Environmental Protection Agency, the Washington DC Center of National Center for Environmental Assessment** (Special Consultant on GIS and Spatial Statistics)
- 1998 Fall, **National Aeronautics and Space Administration (NASA) Goddard Space Flight Center's Distributed Active Archive Center (DAAC)** (Offering GIS training to DAAC personnel in various data teams)
- 1999 June, **Jackson State University**, School of Science and Technology (a half-day workshop on GIS Applications for Environmental Quality)
- 2000 - 2005, **Lloyd Thomas and Ball, Inc.** (Briefing executives relocating to China)
- 2000 Feb-March, **Potomac Capital Investment Corporation** (calculating road mileages of 162 counties)
- 2001 March, **Association American Geographer Annual Meeting**, New York (a workshop on Spatial Analysis/Statistics Using ArcView)
- 2002, March, **Educational Testing Service** (providing 15 multiple choice questions for the AP Human Geography Test in multiple years)
- 2003, May 19-23, Population Science Workshop sponsored by the **Center for Spatially Integrated Social Science (CSISS) and Population Research Institute**, Pennsylvania State University, State College, PA..
- 2005, June 16-17, The Crossroads of GIS and Health Information: Moving Ahead to Improve Cancer Control. Organized by **National Cancer Institute (NCI) and National Library of Medicine (NLM)**, Bethesda North Marriot Hotel and Conference Center, MD.
- 2006, July – Aug, First **Advanced Certificate in Geographic Information Science**. Organized by Earth Systems & GeoInformation Science Department, GMU. Attendees: 21 Chinese provincial government officials from various provinces.
- 2007, June – Aug, Second **Advanced Certificate in Geographic Information Science**. Organized by Earth Systems & GeoInformation Science Department, GMU. Attendees: 24 Chinese provincial government officials from various provinces.
- 2008, July – Aug, Third **Advanced Certificate in Geographic Information Science**. Organized by Earth Systems & GeoInformation Science Department, GMU. Attendees: 21 Chinese provincial government officials from various provinces.

- 2009, June – July, Fourth **Advanced Certificate in Geographic Information Science**. Organized by Earth Systems & GeoInformation Science Department, GMU. Attendees: 18 Chinese provincial government officials from various provinces.
- 2010, Sept 1. Short Course on GIS at the **American Political Science Association Annual Meeting**, Washington, DC. Topic: GIS: Guilty of Committing Ecological Fallacy.
- 2011, March – April, **Advanced GeoInformation Science Workshop**. Organized by the Center for Intelligent Spatial Computing (CISC), GMU, for National Geomatics Center of China. Attendants: 17 Chinese central and provincial government officials.
- 2011, April 13. Organized and ran the workshop: Mapping American Community Survey (ACS) data using ArcGIS. **Association American Geographers Annual Meeting**, Seattle, WA.
- 2012, June 14-15. Workshop on the Benefits (and Burdens) of the American Community Survey, organized by the **Committee on National Statistics, The National Academies**, June 14–15, 2012, Washington, DC.
- 2012, July 7-21. **Advanced Executive Certificate Program in Geoinformation Management**. Organized by the Center for Intelligent Spatial Computing (CISC), GMU, for China National Association for Surveying, Mapping and Geoinformation (NASG). Attendants: 21 Chinese central and provincial government officials.
- 2013, July 6-20. **Advanced Executive Certificate Program in Geoinformation Management**. Organized by the Center for Intelligent Spatial Computing (CISC), GMU, for China National Association for Surveying, Mapping and Geoinformation (NASG). Attendants: 14 Chinese central and provincial government officials.
- 2017, September – 2018, October, Title: **Stand-alone Application for the Class Separability Classification Method to Map SEER Data in a Choropleth Map**. Contract # NNSN261201700718P. Sponsor: NCI/NIH (\$30K)
- 2019, October – September 2020, Title: **Leveraging SEER\*CMapper to enhance NCI mapping capabilities**. Contract # 75N9109P00840. Sponsor: NCI/NIH (\$29,950)
- 2020, September – September 2021. Title: **Development of Educational Materials that Showcase Concepts for Mapping Statistical Estimates with Reliability Information**. Contract # 75N91020P00920. Sponsor: NCI/NIH (\$36,000)

## VI. PROFESSIONAL ACTIVITIES:

### Awards and Recognitions:

- 2001: GEOG 101 won the *Appreciation Award* during the **Innovations 2001: Celebrating Student Learning** event organized by the *Century Club of George Mason University, Inc.*
- 2003: Intergraph Best Practice Award, 2<sup>nd</sup> place, with Phil Yang.
- 2020: SAM Outstanding Service Award, Spatial Analysis and Modeling Specialty Group, AAG.

### Associate Editor:

*International Journal of Applied Geospatial Research*, 2008 – present

### Members of Editorial Board:

- Computers, Environment, and Urban Systems*, 2008 – present
- Demography*, 2016 - 2020
- Geographical Analysis*, 2008 - present
- Journal of Geographic Information Science/Annals of GIS (Column Editor for Spatial Analysis and Modeling)*, 2008 – present
- Spatial Demography*, 2011 - present
- Urban Studies Research (also in charge of the review process and editorial decision)*, 2010 - 2017

**UCGIS Delegate:** GMU delegate to UCGIS, 2000 – 2004, 2017 - present

### Conference Papers Review

- GeoInformatics 2008
- International Conference on Information Systems 2009
- Applied Geography Conference 2010, 2011, 2012
- COM.Geo 2010

### Manuscript Reviews - reviewed manuscripts for

- Agricultural Water Management*      *American Journal of Education*
- American Journal of Preventive Medicine*
- American Sociological Review*      *Annals of Epidemiology*
- Annals, Association of American Geographer\**
- Annals of GIS*      *Annals of Regional Science*
- Applied Geographical Studies*      *Applied Geography*
- Applied Mathematical Modelling*      *Applied Spatial Analysis and Policy*
- Cartographica*
- Cartography and Geographic Information Society (CaGIS)*
- Cities*      *Computer, Environment and Urban Systems\**
- Computers and Geosciences*      *The Canadian Geographer*
- Demography*      *Environment and Planning A\**
- Environment and Planning B\**      *Environmental Engineering Science*
- Environmental Science and Pollution Research*
- Eurasian Geography and Economics*
- European Review of Agricultural Economics*



\* regular – one or more per year

### **Grant Proposal Reviews**

- NASA
  - Applied Sciences Program Review Panel (Integrated Solution Systems), March 2005
  - Applied Sciences Program Review Panel (Disaster & Homeland Security), September, 2007
- U.S. National Science Foundation (NSF), Geography and Regional Science Program, Senior Advisory Panel, 2005 – 2006
- U.S. NSF proposal reviewer (ad hoc):
  - Geography and Regional/Spatial Science Program
  - Sociology Program
  - Anthropology Program
  - Geosciences Division
  - Methodology, Measurement, and Statistics (MMS) Program
  - Small Business Innovative Research Program
  - SES - Cross-disciplinary Program
- NIH Study Sections (Review Panels)
  - Community-Level Health Promotion (CLHP), 2002- 2004  
(The panel meets 3 times a year with each member reviewing 6-8 proposals intensively each time, providing detailed written reports, and vote on 80-120 other proposals.)
  - Epidemiology of Cancer (EPIC) Study Section, Health of the Population (HOP) Integrated Review Group, Summer 2004
  - Population Sciences Subcommittee, Fall 2005
  - Small Business Innovative Research Program (SBIR), Spring, 2010; Spring, 2021
- NIH proposal reviewer (ad hoc):
  - Small Business Innovation Research (SBIR), special emphasis panel (SEP) on “Small Business: Health Informatics” Fall, 2019
- Social Sciences and Humanities, Research Council of Canada (ad hoc reviewer since 2005)
- The Economic and Social Research Council, UK, 2010, 2016
- Sage Foundation, 2002
- University Consortium for Geographic Information Science
- College of Science, Utah State University
- Georgian National Science Foundation, July 2008
- CRDF Global, May, 2011
- Environment and Conservation Fund, Environmental Protection Department, Hong Kong Special Administrative Region (HKSAR), China, October 2014.
- Austrian Science Fund (FWF), 2016
- General Research Fund, Research Grant Council, Hong Kong, China, 2016 - present

### **Review Chapters in Books for Publishers**

Quattrochi, Dale A. and Goodchild, Michael F.(eds) (1997) *Scale in remote sensing and GIS*. Lewis Publishing.

Atkinson, Peter M. and Tate, Nicholas J. (eds) (1999) *Advances in remote sensing and GIS analysis*. John Wiley & Sons.

Kempf-Leonard, K. (ed) 2004. *Encyclopedia of Social Measurements*. Academic Press.



### **Review Book Manuscripts and Proposals**

Blackwell, Guilford, Sage Publications, Prentice-Hall, John Wiley & Sons, CRC/Francis & Taylor, Springer, Guilford Press.

### **Guest Editorial Activities:**

Guest Editor: Special Issue on the Modifiable Areal Unit Problem (MAUP), *Geographical Systems*, 1996, Vol 3, with C.G. Amrhein.

Guest Editor: Special Issue on Distributed GIS (with C. Yang and B. Li), *Journal of Geographic Information Sciences*, 2005

Guest Editor: Special Issues on Segregation and Neighborhood Change (with Michael Reibel and Casey Dawkins), *Urban Geography*, Vol. 28 (4) and (6), 2007.

Guest Editor: Special Issues on Historical GIS (with Billy K. L. So), *Annals of GIS*, Vol. 18 (1).

### **Conference Organizations**

- A special session on the MAUP in AAG Annual Meeting in San Francisco, 1994.
- Steering Committee for the Fifth Virginia GIS Conference, 1994.
- Local Arrangement Committee for the 1995 Applied Geography Conference, 1994-95.
- A special session on Urban Analysis and GIS in AAG Annual Meeting in Fort Worth, 1997.
- Organizational Committee, MAD AAG annual meeting, 1999.
- Arranging 2 workshops for the Population Association of America Meeting, 2001.
- Member, International Scientific Committee, International Society for Environmental Information Sciences (ISEIS) 2004 International Conferences on Environmental Informatics, Regina, Saskatchewan, August 25-27, 2004.
- Organized 7 sessions sponsored by Spatial Analysis and Modeling Specialty Group, AAG Annual Meeting in Philadelphia, PA, 2004.
- Organized 4 general Spatial Analysis sessions and 3 sessions on Visualization and Mining of Spatial Data sponsored by Spatial Analysis and Modeling Specialty Group, AAG Annual Meeting in Denver, CO, 2005.
- Organized 2 sessions in segregation and 2 sessions in spatial analysis and modeling, AAG Annual Meeting in Chicago, IL, 2006
- Organized 4 sessions on Conceptualising and Measuring Residential Segregation: Spatial Scale, Population Structure and Population Dynamics: I, II, III, IV, AAG Annual Meeting in Washington, DC, 2010
- Organized two sessions on Changing Patterns of Segregation in Europe and the United States, AAG Annual Meeting in New York City, NY, 2012
- Program Committee, GIS Ostrava 2013, Geoinformatics for City Transformation, January 21-23, 2013, Ostrava-Poruba, Czech Republic.
- Local Arrangement Committee, 2013 Applied Geography Conference, Annapolis, MD
- Local Organizing Committee, Fostering International Geospatial Health Research Collaborations: Challenges and Opportunities – a High Level Forum, The Chinese University of Hong Kong, June 16-18, 2014
- Program Committee, GIS Ostrava 2014, Geoinformatics for Intelligent Transportation, January 27-29, 2014, Ostrava-Poruba, Czech Republic.
- Organized two panel sessions on Big Spatiotemporal (BiST) Data Analytics, I and II, AAG Annual Meetings in Chicago, IL, 2015

- Program Committee, GeoComputation, 2015 Conference, May 20 – 23, 2015, Dallas, Texas.
- Program Committee, The First International Workshop on Spatiotemporal Computing, July 13-15th, 2015, George Mason University, Fairfax, Virginia.
- Program Committee, GIS Ostrava 2016, The Rise of Big Spatial Data, March 16-18, 2016, Ostrava-Poruba, Czech Republic.
- Organized three sessions on Uncertainty and Quality Issues in Spatial Data Analysis, American Association of Geographers Annual Meeting, San Francisco, CA, March 29 – April 2, 2016
- Program Committee, GIS Ostrava 2017, Dynamics in GIScience, March 22-24, 2017, Ostrava-Poruba, Czech Republic.

### **National Committees**

- Census Advisory Board, the Association of American Geographers (AAG), 2001- 2008
- Census Advisory Board, the Association of American Geographers (AAG), 1996- 2000.
- Chair (elected), Spatial Analysis and Modeling Specialty Group (SAM), AAG, 2003 - 2006
- Board Member (elected), Spatial Analysis and Modeling Group (SAM), AAG, 2000 - 2003 (also serve as one of the judges of Student Paper Competition).
- Teller Committee, Association of American Geographers (AAG), 2002, 2004, 2011.
- NASA Applied Sciences Public Health Working Group, 2005 - 2006
- Working Group on Methods and Measurement Science in Health Disparities Organizational Activities, National Institute on Minority Health and Health Disparities (NIMHD), National Institutes of Health (NIH), 2016

### **Other Professional Services**

- Reappointment, Tenure and Promotion Reviews:
  - Arizona State University
  - Case Western Reserve University
  - City University of New York – Graduate Center
  - Clark University
  - DePaul University
  - East Carolina State University
  - George Washington University and Children’s Hospital
  - Hong Kong Baptist University
  - Northern Illinois University
  - University at Buffalo, SUNY
  - University of Glasgow, UK
  - University of Louisville
  - University of Michigan
  - University of South Florida
  - University of Tennessee-Knoxville
  - Utah State University
- Judge, AAG MMQM Specialty Group Student Paper Competition, 1996, Charlotte, N.C.
- Editorial Board Member, newsletter for The Association of Chinese Professionals in Geographic Information Science (2004).

- Member, Advisory Committee, MLA Language Map ([www.mla.org](http://www.mla.org)), Modern Language Association of America (2005 – 2009).
- Judge: Student Paper Competition, Geoinformatics, May 25-27, 2007, Nanjing, China (reviewed 24 students papers)
- Technical Committee, GeoInformatics, 2008, June 28-29, 2008, Guangzhou, China
- Program Review/Appraisal:
  - Masters of Spatial Analysis, Ryerson University, Toronto, Canada; for the Ontario Council for Graduate Studies (OCGS); June 2-3, 2008 (with Professor Grant Thrall, University of Florida)
  - Academic Consultation Panel: Faculty of Social Sciences, Departments of Geography, History, Sociology, and Master of Social Sciences in Contemporary China Studies, Hong Kong Baptist University, Hong Kong; December 17-19, 2015 (with Mei-Po Kwan, University of Illinois at Urbana-Champaign)
  - External Reviewer: Proposal for the Bachelor of Education (Honours) (Geography) (Five-year Full-time), The Hong Kong Institute of Education, September, 2015
  - Chair, Panel of Departmental Review and Benchmarking Exercise, Department of Science and Environmental Studies, The Education University of Hong Kong, March, 2020.
- Specialist Meeting, Future Directions in Spatial Demography, convened by University of California, Santa Barbara, Penn State University, and NIH Advanced Spatial Analysis Training Program, December 12-13, 2011, Santa Barbara, CA.
- Member of external review panel, Methods and Measurement Science for Health Disparities, National Institute for Minority and Health Disparity (NIMHD), National Institute of Health (NIH), March-April, 2016

**University Services:** (George Mason University)

Faculty Senate, COS representative, 2019 – 2021

- Senate representative on the University Innovative Committee
- Senate representative on the University Master Plan Steering Committee
- Sergeant-at-Arms

*Committees*

Technology Across Curriculum Committee, University committee, 1998- 1999.

Committee on Salary Equity, University Senate Standing Committee, 1998-2001

Exploratory Committee on Computational Social Science, 2000 (appointed by Provost)

Committee on Computational Social Science, 2000 (appointed by Provost)

Search Committee, Computational Social Science, 2002

University-wide Quantitative Assessment Committee, 2002

University-wide Panels on IT Competency (2 panels: database and spreadsheet), 2002.

Provost's Ad Hoc Committee on Geography, 2002

Provost's Ad Hoc Committee on Summer Research Funding, 2003

Ad Hoc Committee on GIS Classroom in Innovation Hall, 2003

Steering Committee, College of Science, 2004-2005

*Others*

P&T Review for a faculty member in the College of Nursing and Health Sciences (2004)

Review an Application for 2006-2007 Study Leave for Tenured Faculty (2006)

Contract Renewal Committee – Geography (2006)

Out-Reach: visited Nanjing Normal University and Nanjing University of Information Science and Technology (NUIST) to discuss 1-2-1 programs and other collaboration, and the South China Sea Institute of Oceanology (in Guangzhou) to discuss possibility of a joint Ph.D. program (2007).

Krasnow Level 2 P&T Committee: review for Dr. Dawn C. Parker (2009)

*College/School Level Services*

*In the School of Computational Science:*

College of Science Task Force on Integration, SCS/COS, 2006 - 2007

Grievance Committee, SCS, 2004 - 2005

Search Committee for Research Scientist, CEOSR, 2002.

Promotion and Tenure Review Committee, SCS, 2001 (for Dr. Long Chiu)

Graduate Committee, CSI, 1993-1999

*In the College of Arts and Sciences:*

Advisory Committee on Promotion & Tenure, College of Arts and Sciences, 2000-01

Grade Appeals Committee, College of Arts and Sciences, 1996

Program Development Committee, College of Arts and Sciences, 1995

University Senator: College of Science representative to the Senate, 2019 - 2012

*Board Member:*

Advisory Board, Department of Instructional Improvement and Instructional Technologies (DoIIT), 1998 - 1999

Executive Board, School of Computational Science (SCS), GMU, 1997 - 1999

Faculty Advisory Council, Center for Asian Pacific Economic Cooperation (CAPEC), GMU, 1997 – 1998.

**Departmental Services:** (George Mason University)

Faculty liaison to the library, 2008 – 2013

Judge, Poster Competition, GIS Day, Nov. 2015, 2017

*Committees*

Graduate Admission Committee, 1993 - 2002

Recruitment Committee for Laboratory Administrator, 1993

Search Committees, 1994, 1996

Grade Appeals Committee, 1994

Chair Reappointment Committee, 1994

Teaching Committees, 1995, 1996

Chair Evaluation Committee, 1996

Search Committee for Laboratory Manager, 1997

Chair, Chair Evaluation Committee, 1997

Chair, Promotion and Tenure Committee, 1998  
Member, Promotion and Tenure Committee, 1999, 2009, 2020  
Salary Committee, 1998-99  
Chair, Search Committee, 1998-99, 1999-00  
Search Committee for Laboratory Manager, 1999, 2001-2  
GRA Allocation Committee, 2000  
Chair, Promotion Committee, 2009  
Search Committee, GIScience position, 2017-18, 2018-19  
Chair Search Committee, 2019

*Administration*

GESS Summer Chair, 1994, 1996, 1997, 1998.  
Graduate Coordinator, MS in Geographic & Cartographic Science, 1994-1996, 2000 – 2002  
Chair, Earth Systems and GeoInformation Sciences, School of Computational  
Sciences/College of Science, 2002 - July 2008