
姓名：溫在弘 E-mail: wenthung@ntu.edu.tw

現職：國立臺灣大學地理環境資源學系教授
國立臺灣大學流行病學與預防醫學研究所合聘教授
國立臺灣大學理學院空間資訊研究中心主任

學歷：國立臺灣大學生物環境系統工程學系博士 (2006)

專長：空間流行病學、地理計算科學與空間分析、地理資料視覺化

經歷：

國立臺灣大學地理環境資源學系 教授 (2017-迄今)
國立臺灣大學地理環境資源學系 副教授 (2013-2017)
國立臺灣大學地理環境資源學系 助理教授 (2009-2013)
國立臺灣大學流行病學研究所 專案助理教授 (2008-2009)
中央研究院地理資訊科學研究專題中心 博士後研究 (2007-2008)

獲獎/榮譽：

臺大醫院 防疫成果記者會：急診多層次感染症地理資訊系統 (2021.12.02)
國立臺灣大學 免評鑑教師 (2021)
國立臺灣大學 防疫記者會：如果臺大校園發生群聚擴散？(2020.05.08)
科技部 領袖學者助攻方案：沙克爾頓計畫 (突破研究型) (2019-2021)
科技部 成果記者會：動態時空演算法—掌握傳染病感染資訊 (2018.08.15)
科技部 未來科技突破獎：適地性時空疫情預警系統 (2017)
科技部 吳大猷先生紀念獎 (2016)
科技部 優秀年輕學者計畫 (2014-2016)
國立臺灣大學 教學優良獎 (2011, 2013, 2016)
國立臺灣大學 教學傑出獎 (2018)
國立臺灣大學 教研績優彈性加給 (2016-2023)

學術服務：

科技部學門複審委員(區域研究及地理學、空間資訊科技) (2018-2020)
行政院環境保護署 政府資料開放諮詢小組 (2018-2020, 2022-2023)
中華民國地圖學會 理事長 (2019-迄今)
中華民國地理學會 理事長 (2019-2022)
台灣地理資訊學會 理事 (2018-迄今)
台灣人口學會 常務理事、監事 (2017-迄今)
國家蚊媒傳染病研究中心 防疫研究專家 (2016-2020)

學術編輯：

Tropical Medicine and Infectious Disease (SCI) 客座編輯 (2022-2023)
BMC Public Health (SCI) 編輯委員 (2018-迄今)
PLOS ONE (SCI) 學術編輯 (2018-迄今)
《人口學刊》主編 (2020-迄今) (台灣社會科學核心期刊 TSSCI)
《地理學報》編輯委員 (2015-2018, 2021-迄今) (台灣社會科學核心期刊 TSSCI)
《地理學會會刊》主編 (2013-2017)

校內服務：

國立台灣大學 校園規劃小組委員 (2019-2021)
國立台灣大學 校務會議代表 (2015-2016、2020-2021)
國立台灣大學 師資培育中心合聘教師 (2020-2022)
國立台灣大學 統計碩士學位學程教師 (2013-迄今)
國立台灣大學 人口與性別研究中心 資訊組長 (2010-2018)
國立台灣大學 傳染病防治研究及教育中心 合聘研究員 (2009-迄今)
理學院 地理環境資源學系主任 (2018-2021)
理學院 空間資訊研究中心主任 (2021-迄今)
理學院 院務會議代表 (2014、2016、2018-2021)
理學院 教師評審委員會 (2018-迄今)
理學院 全球變遷研究中心 空間資訊組長 (2014-2017)

2016-2022 List of NSTC (MOST) Projects 執行國科會(科技部)專題計畫

計畫名稱	擔任工作	起訖年月	經費總額
「大學與地方政府合作推動地方人文發展與跨域治理」推動與協調計畫 (111-2420-H-002-007-MY3)	共同主持人	2022/11/01~2025/10/31	9,400,000
導入多媒人工智能與地理資訊及區塊鏈技術的新時代緊急醫療指揮派遣及葉克膜急救中心系統 (111-2320-B-002-055-)	共同主持人	2022/08/01~2023/07/31	1,100,000
建置公衛研究專用之環境資料整合平台-Part II (110-2314-B-038-057-)	共同主持人	2021/08/01~2022/07/31	1,160,000
評估都市可承受的疫情規模：整合疫情擴散與篩檢資源可及性的時空風險模式(110-2410-H-002-131-MY3)	主持人	2021/08/01~2024/07/31	3,677,000
新興科技創新營運模式 - 「數位健康與醫療生態系創新營運模式研究中心」設立與維運計畫-資源整合、平台建置、模型優化、新創業態(4/4)(109-2425-H-002-001-)	共同主持人	2020/06/01~2021/07/31	5,557,000
利用同步即時遠距照護合併隨身穿戴無脈壓帶血壓心律與空汙量測進行血壓變異度綜效共振探討(108-2314-B-002-200-)	共同主持人	2019/08/01~2020/07/31	1,100,000
建立全球傳染疾病的傳播風險預警架構：評估東亞區域的境外移入風險 (108-2638-H-002-002-MY2)	主持人	2019/08/01~2022/07/31	18,000,000
重塑全球入侵物種治理：定位台灣為亞洲紅火蟻防治、預測及教育樞紐 (108-2638-H-002-001-MY2)	共同主持人	2019/08/01~2021/07/31	14,763,000
開發網頁化救護派遣儘早急救品管自動化與視覺化作業系統 · 優化社區急救志願者策略部署提昇救護派遣儘早急救效能 (108-2320-B-002-053-MY2)	共同主持人	2019/08/01~2021/10/31	2,960,000
新興科技創新營運模式 - 「數位健康與醫療生態系創新營運模式研究中心」設立與維運計畫-資源整合、平台建置、模型優化、新創業態(3/4)(108-2420-H-002-001-)	共同主持人	2019/06/01~2020/07/31	5,850,000
評估疾病空間群聚的特徵尺度於偵測疫情擴散的臨界條件 (107-2410-H-002-167-MY3)	主持人	2018/08/01~2019/07/31	3,087,000
新興科技創新營運模式 - 「數位健康與醫療生態系創新營運模式研究中心」設立與維運計畫-資源整合、平台建置、模型優化、新創業態(2/4)(107-2420-H-002-002-)	共同主持人	2018/06/01~2019/08/31	6,500,000
以空間巨量資料及群眾外包為基礎建立具有臨界狀態早期預警能力的都市環境感測架構 - 建立多層次都市人口流動時空模式於傳染病擴散風險評估(子計畫三)(3/3)(106-2627-M-002-010-)	主持人	2017/08/01~2018/07/31	834,000
新興科技創新營運模式 - 「數位健康與醫療生態系創新營運模式研究中心」設立與維運計畫-資源整合、平台建置、模型優化、新創業態(1/4)(106-2420-H-002-026-)	共同主持人	2017/06/01~2018/07/31	7,825,000
建立高時空解析度的地理人口分區架構 (105-2410-H-002-150-MY3)	主持人	2016/08/01~2019/12/31	1,902,000

2017-2022 Invited Talks in the international conferences/workshops

受邀國際會議（工作坊、課程等）演講

2022 (online)

- **Using GIS in Public Health Practice**, Invited Speaker, Faculty of Public Health, Mahidol University, Thailand
- **Evaluating Road Traffic Accidents under Climate Change Scenarios**, Invited Talk, AICT/CAS Joint Property/Casualty and Health Actuarial Seminar

2021 (online)

- **Modeling Spatial-temporal Transmissibility of Epidemics**, Plenary Talk, One Health & Outbreak Surveillance Symposium 2021, Centre for Infectious Disease Epidemiology & Research, National University of Singapore (NUS).
- **How Much Is a City's Response Capacity against a Pandemic**, Keynote Speaker, Asian Seminar in Regional Science (ASRS).
- **GIS Applications in Aiding Dengue Prevention Program**, Session Moderator, New Southbound Policy: Taiwan-Indonesia Dengue Control and Prevention Program, Taiwan Centers for Disease Control.
- **Building an Agent-based Network Model for Simulating Epidemic Outbreaks**, Invited Talk, International Workshop: AI-Biz 2021, The Japanese Society for Artificial Intelligence.
- **Monitoring Dengue Risk in Time and Space**, Invited Talk, Webinar on Environmental Monitoring and Infectious Disease Prevention, Taiwan-ICDF (外交部國際合作發展基金會)。

2020 (online)

- **How Taiwanese Geographers Respond to COVID-19 Pandemic**, Panel Discussant, American Association of Geographers (AAG) Annual Meeting: Geographers Respond to COVID-19.

2019

- **Profiling Diffusion Structures: Tracking Epidemics and Clustering Evolution in Time and Space**, Invited Talk, Global Strategy on Control and Prevention of Mosquito-Borne Viral Diseases, National Health Research Institutes (NHRI), Taiwan.

2018

- **A Geo-Computational Algorithm for Characterizing Diffusion Dynamics of Disease Clustering**, Invited Talk, Symposium on Infectious Disease Modeling and Control, National Health Research Institutes (NHRI), Taiwan.
- **Understanding the Process of Geospatial Reasoning**, Invited Talk, International Conference on Spatial Analysis and Modeling, University of Tokyo, Japan.

2017

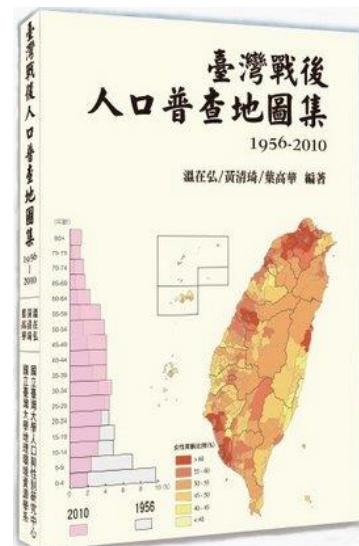
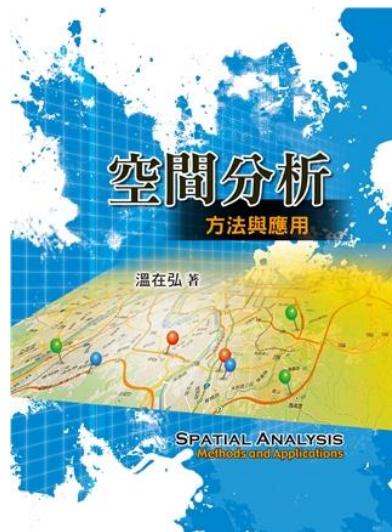
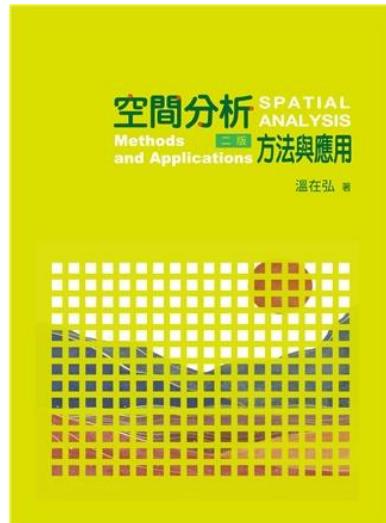
- **Integrating Weather Radar Data and Urban Imagery for Dengue Risk**, EGU General Assembly (PICO Talk), Vienna, Austria.



2012-2022 Textbooks and Atlas Books

教科書與地圖集

- 溫在弘 (2021) · 《空間分析：方法與應用（第二版）》 · 台北：雙葉書廊 · 344 頁。
(ISBN: 978-957-90-9696-6)
線上教材：R 語言實作範例 <https://wenlab501.github.io/SpatialAnalysis/>
- 溫在弘 (2015) · 《空間分析：方法與應用》 · 台北：雙葉書廊 · 285 頁。
(ISBN: 978-986-56-6821-1)
- 溫在弘、黃清琦、葉高華 (2012) · 《台灣戰後人口普查地圖集：1956-2010》 ·
台北：台大人口與性別研究中心 · 305 頁。 (ISBN: 978-986-03-5765-3)
台灣人口普查互動地圖：<https://wenlab501.github.io/censusmap/zh/>



2017-2022 Refereed Publications 期刊論文與學術專書專章
(* corresponding author)

1. Kuo FY, **Wen TH** * (2022), Assessing the Spatial Variability of Raising Public Risk Awareness for the Intervention Performance of COVID-19 Voluntary Screening: A Spatial Simulation Approach, *Applied Geography* 148:102804.
2. Lin CH, Liu YH, Huang RN, Lin CC, Liu H. KH, **Wen TH** * (2022), Modeling Geographical Invasions of Solenopsis invicta Influenced by Land-use Patterns, *Scientific Reports* 12, 11733.
3. Lin CH, **Wen TH** (2022), How Spatial Epidemiology Help Understand Infectious Disease Transmission, *Tropical Medicine and Infectious Disease* 7(8), 164.
4. **Wen TH** * (2022), Spatial Analysis Methods for the Geography of Infectious Diseases: Review and Prospect, *Journal of Geographical Science* 《地理學報》 101: 109-124.
5. Yuan HY, Hossain MP, **Wen TH**, Wang MJ (2022), Assessment of the Fatality Rate and Transmissibility Taking Account of Undetected Cases during an Unprecedented COVID-19 Surge in Taiwan, *BMC Infectious Diseases* 22:271.
6. Wu TG, Chen YD, Chen BH, Harada KH, Lee K, Deng F, Rood M, Chen CC, Tran CT, Chien KL, **Wen TH**, Wu CF (2022), Identifying Low-PM2.5 Exposure Commuting Routes for Cyclists through Modeling with the Random Forest Algorithm based on Low-cost Sensor Measurements in Three Asian Cities, *Environmental Pollution* 294:118597.
7. Kuo PF, Putra IGB, Setiawan FA, **Wen TH**, Chiu CS, Sulistyah UD (2022), The Impact of the COVID-19 Pandemic on O-D Flow and Airport Networks in the Origin Country and in Northeast Asia, *Journal of Air Transport Management* 100:102192.
8. Kuo FY, **Wen TH** * (2021), Regionalization for Infection Control: An Algorithm for Delineating Containment Zones Considering the Regularity of Human Mobility, *Applied Geography* 126:102375
9. Chan CH, **Wen TH** * (2021), Revisiting the Effects of High-Speed Railway Transfers in the Early COVID-19 Cross-Province Transmission in Mainland China, *Int. J. Environ. Res. Public Health* 18(12):6394.
10. Chan CH, Chu TH, Wu JH P, **Wen TH** * (2021), Spatially Characterizing Major Airline Alliances: A Network Analysis, *ISPRS International Journal of Geo-Information* 10(1):37.
11. Jiang JA, Wang JC, Hsieh CL, Tseng KS, Ye ZW, Su LK, Sun CH, **Wen TH**, Juang JY (2021), An Alternative Body Temperature Measurement Solution: Combination of a Highly Accurate Monitoring System and a Visualized Public Health Cloud Platform, *IEEE Internet of Things Journal* 8(7):5778-5793
12. **Wen TH** *, Liao HY, Yang KL, Chen TH (2021), Characterizing After-Rain Standing Waters in Urban Built Environments through a Multilevel Image Analysis, X. Yang (eds.), *Urban Remote Sensing: Monitoring, Synthesis, and Modeling in the Urban Environment*, Wiley-Blackwell.

13. Kuo FY, **Wen TH** * (2021), A Mathematical Model for Evaluating the Medical Resource Availability of COVID-19 in Time and Space, S. Shaw and D. Sui (eds.), *Mapping COVID-19 in Space and Time*, Springer.
14. Liao HY, **Wen TH** * (2020), Extracting Urban Water Bodies from High-resolution Radar Images: Measuring the Urban Surface Morphology to Control for Radar's Double-bounce Effect, *International Journal of Applied Earth Observations and Geoinformation* 85:102003.
15. Hossain MP, Junus A, Zhu X, Jia P, **Wen TH**, Pfeiffer D, Yuan HY (2020), The Effects of Border Control and Quarantine Measures on the Spread of COVID-19, *Epidemics* 32: 100397.
16. Chiang YL, Wang JC, Sun CH, **Wen TH**, Juang JY, Jiang JA (2020), Mobile Measurement of Particulate Matter Concentrations on Urban Streets: System Development and Field Verification, *IEEE Access* 8:197617–197629
17. Cheng YC, Lee FJ, Hsu YT, Slud EV, Hsiung CA, Chen CH, Liao CL, **Wen TH**, Chang CW, Chang JH, Wu HY, Chang TP, Lin PS, Ho HP, Hung WF, Chou JD, Tsou HH (2020), Real-Time Dengue Forecast for Outbreak Alerts in Southern Taiwan, *PLOS Neglected Tropical Diseases* 14(7): e0008434.
18. Ng TC, **Wen TH** * (2019), Spatially Adjusted Time-varying Reproductive Numbers: Understanding the Geographical Expansion of Urban Dengue Outbreaks, *Scientific Reports* 9: 19172.
19. Ng IC, **Wen TH** *, Yang ST, Fang CT *, Hsueh PR (2019), Detecting Tuberculosis Clusters in Urban Neighborhoods, Taipei, Taiwan: Linking Geographic and Genotyping Evidence, *Applied Geography* 104: 56-64.
20. Yuan HY, **Wen TH**, Kung YH, Tsou HH, Chen CH, Chen LW, Lin PS (2019), Prediction of Annual Dengue Incidence by Hydro-Climatic Extremes for Southern Taiwan, *International Journal of Biometeorology* 63(2): 259-268.
21. **Wen TH** (2019), spatial Assimilation, In Anthony M. Orum (Eds.), *Wiley-Blackwell Encyclopedia of Urban and Regional Studies*, Wiley-Blackwell.
22. Chen TH, Chen YJ, **Wen TH** * (2018), Revisiting the Role of Rainfall Variability and its Interactive Effects with the Built Environment in Urban Dengue Outbreaks, *Applied Geography* 101(12):14-22.
23. **Wen TH** *, Hsu CS, Hu MC (2018), Evaluating Neighborhood Structures for Modeling Intercity Diffusion of Large-scale Dengue Epidemics, *International Journal of Health Geographics* 17:9.
24. Kuo FY, **Wen TH** *, Sabel C (2018), Characterizing Diffusion Dynamics of Disease Clustering: A Modified Space-Time DBSCAN (MST-DBSCAN) Algorithm, *Annals of the American Association of Geographers* 108(4):1168-1186.
25. Ko HY, Li YT, Chao DY, Chang YC, Li ZR, Wang M, Kao CL, **Wen TH**, Shu PY, Chang GJ, King CC (2018), Inter- and Intra-Host Sequence Diversity Reveal the Emergence of Viral Variants during an Overwintering Epidemic Caused by Dengue Virus Serotype 2 in Southern Taiwan, *PLOS Neglected Tropical Diseases* 12(10): e0006827.

26. Wen TH, Hsu CS, Sun CH, Jiang JA, Juang JY (2018), A Location-based Client-Server Framework for Assessing Personal Exposure to the Risk of Respiratory Disease Transmission, In Shaw SL and Sui D (Eds.). *Human Dynamics Research in Smart and Connected Communities*, Springer
27. Chin WC, **Wen TH ***, Sabel C, Wang IH (2017), A Geo-Computational Algorithm for Exploring the Structure of Diffusion Progression in Time and Space, *Scientific Reports* 7:12565.
28. **Wen TH ***, Chin WC, Lai PC (2017), Understanding the Topological Characteristics and Flow Complexity of Urban Traffic Congestion, *PHYSICA A: Statistical Mechanics and Its Applications* 473:166-177.
29. Lan YC, **Wen TH**, Chang CC, Liu HF, Lee PF, Huang CY, Chomel BB, Chen YM (2017), Indigenous Wildlife Rabies in Taiwan: Ferret Badgers, a Long-term Terrestrial Reservoir, *BioMed Research International*, Vol. 2017, Article ID 5491640.
30. Chen TH, **Wen TH ***, Fang CT, Chan PC (2017), Assessing Infection Risk of Tuberculosis (TB) Contacts in Different Case-contact Contexts, *Taiwan Journal of Public Health 《台灣公共衛生雜誌》* 36(2): 107-121
31. **Wen TH**, Chin CB, Lai PC (2017), Link Structure Analysis of Urban Street Networks for Delineating Traffic Impact Areas. In Essaaidi and Nemiche (Eds.). *Advances in Complex Societal, Environmental and Engineered Systems*, Springer.