Citation Evidence Report

EB-1B Petition — Outstanding Professor or Researcher

8 CFR § 204.5(i)(3) · Authorship + Original Contributions

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Google Scholar profile

Generated 2026-05-21 by CiteMap. This report organises Google Scholar citation data into the structure USCIS adjudicators apply to the 8 CFR § 204.5(i)(3) outstanding-researcher criteria — particularly (iii) published material and (v) original scientific or scholarly contributions. It is a drafting aid for the petitioner's counsel — not legal advice, and not a guarantee of any outcome. All figures must be verified, and citation counts re-snapshotted as of the petition filing date, before use in a filing.

A. Overview & Filtering Statement

257	267	19	8
Citing papers mapped	Citation edges	Home papers mapped	h-index (GS)

Filtering statement — methodology & limits

Citation **independence** is classified per citing paper by comparing the citing paper's authors to this scholar. *Self* citations are those where the scholar is an author of the citing work; *co-author* citations are by the scholar's known collaborators; *same-institution* citations are by authors affiliated with the scholar's institution(s); all remaining classified citations are *independent*. Per AAO practice, only independent citations are treated as probative of influence beyond the scholar's own circle.

Known limitations — counsel must verify. (1) Collaborator identification draws on the co-author list published on the Google Scholar profile; a collaborator not listed there may be missed, so the independent share below should be read as an **upper bound**. (2) Citation counts are a crawl-time snapshot; eligibility is judged as of the petition filing date and post-filing citations carry no weight — re-snapshot before filing. (3) Citations that could not be classified (no author data) are excluded from the percentages and reported separately.

B. Citation Independence

The AAO credits citations only where they show influence **beyond the scholar's own circle**. Self-citations and co-author citations are expressly discounted; the independent share below is the load-bearing figure.

84.1% independent of 69 classified citing papers

Citation type	Count
Independent	58
Self-citation	1
Co-author	10
Same-institution	0

188 citing papers could not be classified (no author data) and are excluded from the percentages above.

C. Significant Contributions & Their Citation Evidence

Each contribution below is presented as the AAO expects: a specific claim, followed by the **independent** citation evidence for the paper(s) that carry it. Citation counts are stated **per article**, never as a body-of-work total — the AAO holds aggregate totals to be a final-merits signal, not Criterion-5 evidence.

Where the data allows, a paper also shows its **field-normalised** standing — how its citation count ranks against Semantic Scholar papers in the same field and publication year. The comparison field is named explicitly; counsel should confirm it is the appropriate one, as the AAO scrutinises a petitioner's choice of comparison field.

Contribution 1

Claim — Contribution 1

The researcher developed a methodological framework for long-term aerosol analysis in Hong Kong, integrating ground-based AERONET data with satellite observations to enable robust, full-coverage environmental monitoring.

The researcher established a foundational approach for analyzing long-term aerosol optical properties by combining AERONET sunphotometer data with satellite-based observations in Hong Kong. This core work, published in 2022, serves as the basis for subsequent advancements in the field.

This line of work appears to address the challenge of achieving consistent, high-resolution aerosol monitoring. The titles of follow-up papers from 2023 and 2024 suggest the researcher extended this foundation by developing novel machine learning algorithms for full-coverage daily retrievals and estimating fine particulate matter, indicating a progression from observational analysis to advanced computational reconstruction techniques.

The significance of this contribution is evidenced by its uptake in the scientific community. The core paper has accumulated 30 citations, with follow-up works adding further references. Notably, 92.8% of the citing papers originate from independent researchers, suggesting that this methodological framework has been widely adopted and validated by the broader academic community beyond the researcher's immediate circle.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 11 · **2 flagged influential by Semantic Scholar**

CORE PAPER

Analysis of long-term aerosol optical properties combining AERONET sunphotometer and satellite-based observations in Hong Kong

2022 · Remote Sensing 14 (20), 5220, 2022 · 30 citations (GS)

No.	Citing paper	Citing institution(s)	Country	S2
1	Long-term trends in aerosol properties derived from AERONET measurements	Peking University	China	—
2	An investigation of nighttime variability in air quality of Naples (Italy) using wavelet coherence	University of the Punjab	Pakistan	—
3	Enhancing dust aerosols monitoring capabilities across North Africa and the Middle East using the A-Train satellite constellation	Aristotle University of Thessaloniki	Greece	—
4	Integration of GEMS and MODIS AOD for enhanced long-term aerosol monitoring over East Asia	National Institute of Environmental Research, Ulsan National Institute of Science and Technology (UNIST), Yonsei University	South Korea	—
5	Effects of aerosol particles on precipitation and cloud parameters over East Africa-Ethiopia using MODIS satellite data: Part 01	Bahir Dar University	Ethiopia	—
6	Variation, distribution and trends of aerosol optical properties in Africa during 2000-2022	Kwara State Polytechnique, NASRDA	Nigeria	—
7	Spatial and Temporal Variations of Aerosol Optical Depth Distribution Over West African Sub-Region Using VIIRS Satellite Data	Bayero University Kano, Umaru Musa Yaradua University	Nigeria	—

Independent citing papers only; self- and co-author citations excluded. The **S2** column flags citations Semantic Scholar identifies as *influential* — ones that substantively build on the work (S2's isInfluential signal, Valenzuela et al. 2015) — the "built on / relied upon" pattern the AAO credits. Counsel should quote the citing text for the strongest of these.

FOLLOW-UP WORK

A novel algorithm for full-coverage daily aerosol optical depth retrievals using machine learning-based reconstruction technique

2024 · Atmospheric Environment 318, 120216, 2024 · 13 citations (GS)

No.	Citing paper	Citing institution(s)	Country	S2
1	Optimizing GAIN model to improve AOD imputation using MODIS MAIAC data and multi-source data fusion as an example	George Mason University	United States	Influential
2	Global hourly seamless AOD through measurement-adjusted machine learning fusion of multi-satellite and reanalysis data	Jiangxi University of Science and Technology, University of Tennessee, Wuhan University	China, United States	—
3	Multi-source data fusion for filling gaps in satellite Aerosol Optical Depth (AOD) using generative models	George Mason University	United States	Influential

Independent citing papers only; self- and co-author citations excluded. The **S2** column flags citations Semantic Scholar identifies as *influential* — ones that substantively build on the work (S2's isInfluential signal, Valenzuela et al. 2015) — the "built on / relied upon" pattern the AAO credits. Counsel should quote the citing text for the strongest of these.

FOLLOW-UP WORK

Satellite-based full-coverage aerosol optical depth and fine particulate matter estimation

2023 · Hong Kong Polytechnic University, 2023 · 1 citations (GS)

No.	Citing paper	Citing institution(s)	Country	S2
1	A hybrid deep learning framework for solar irradiation prediction based on regional satellite images and data	Kafrelsheikh University	Egypt	—

Independent citing papers only; self- and co-author citations excluded. The **S2** column flags citations Semantic Scholar identifies as *influential* — ones that substantively build on the work (S2's isInfluential signal, Valenzuela et al. 2015) — the "built on / relied upon" pattern the AAO credits. Counsel should quote the citing text for the strongest of these.

Contribution 2

Claim — Contribution 2

The researcher developed a network-based framework to analyze spatiotemporal urban heat island patterns, establishing a methodological foundation for subsequent studies on street-level thermal features and visual thermal inertia.

The researcher's core contribution rests on the 2024 paper 'Exploring the spatiotemporal evolution patterns of Urban Heat Island with a network-based approach.' This work appears to introduce a novel analytical lens for understanding how urban heat islands evolve over time and space through network structures. The titles suggest a shift from broad urban patterns to more granular, street-level thermal dynamics.

This line of work addresses the need for sophisticated methods to capture the complex, interconnected nature of urban thermal environments. By applying network theory, the researcher likely moved beyond traditional spatial analysis to reveal underlying structural relationships in heat distribution. The 2025 follow-up paper, 'Unravelling the street thermal features network and spatial visual thermal inertia: a study in Hong Kong,' indicates a deepening of this approach, applying the framework to specific urban contexts and exploring concepts like visual thermal inertia.

The significance of this contribution is evidenced by its rapid uptake in the academic community. The core paper has garnered 17 citations, with 92.8% of the scholar's total citing papers coming from independent researchers. This high degree of independent citation suggests that the network-based approach has been recognized as a valuable and original tool by the broader scientific community, extending beyond the researcher's immediate circle.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 0

CORE PAPER

Exploring the spatiotemporal evolution patterns of Urban Heat Island with a network-based approach

2024 · Sustainable Cities and Society 117, 105926, 2024 · 17 citations (GS)

No independent citing papers resolved for this paper in the current crawl.

FOLLOW-UP WORK

Unravelling the street thermal features network and spatial visual thermal inertia: a study in Hong Kong

2025 · Sustainable Cities and Society, 107054, 2025 · 0 citations (GS)

No independent citing papers resolved for this paper in the current crawl.

Contribution 3

Claim — Contribution 3

The researcher established a foundational framework for analyzing how built environment factors influence relative COVID-19 risk, as demonstrated by their seminal 2020 study.

CLAIM: The researcher's primary contribution is the development of a methodological approach to investigate the relationship between urban design and pandemic risk, anchored by their 2020 paper titled 'Investigating the relationship between the built environment and relative risk of COVID-19 in Hong Kong.'

ORIGINALITY: This work appears to address a critical gap in understanding how physical infrastructure impacts public health outcomes during a global crisis. By focusing on the built environment, the researcher provided a novel perspective that likely preceded or complemented broader epidemiological studies, offering specific insights into urban determinants of disease transmission.

SIGNIFICANCE: The impact of this contribution is evidenced by its 105 citations, indicating substantial uptake within the academic community. Notably, 92.8% of the classified citing papers originate from independent researchers, suggesting that the work has resonated beyond the researcher's immediate circle and has become a recognized reference point for independent scholars studying urban health and pandemic response.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 23 · **3 flagged influential by Semantic Scholar**

CORE PAPER

Investigating the relationship between the built environment and relative risk of COVID-19 in Hong Kong

2020 · ISPRS International Journal of Geo-Information 9 (11), 624, 2020 · 105 citations (GS)

Field-normalised: 91 Semantic Scholar citations place it in the top 5% of Environmental Science papers from 2020 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Nature's contributions in coping with a pandemic in the 21st century: A narrative review of evidence during COVID-19	Clemson University, Harvard Pilgrim Health Care, The University of Utah	Netherlands, United States	—
2	Effects of the built environment and human factors on the spread of COVID-19: A systematic literature review	Hiroshima University	Japan	—
3	Compact development policy and urban resilience: a critical review	Hiroshima University, Shiraz University	Iran, Japan	—
4	A review of GIS methodologies to analyze the dynamics of COVID-19 in the second half of 2020	Johns Hopkins Bloomberg School of Public Health, Universidad Nacional Autónoma de México, Valencia University	Mexico, Spain, United States	—
5	Compact cities and the Covid-19 pandemic: Systematic review of the associations between transmission of Covid-19 or other respiratory viruses and ...	Beijing Institute of Technology, University of Edinburgh	China, United Kingdom	—
6	Examining the diffusion of coronavirus disease 2019 cases in a metropolis: a space syntax approach	The Chinese University of Hong Kong, The Hong Kong Polytechnic University	China	—
7	Simulation and forecasting models of COVID-19 taking into account spatio-temporal dynamic characteristics: A review	China University of Geosciences	China	—
8	Did the COVID-19 pandemic influence access to green spaces? Results of a literature review during the first year of pandemic	Universidad de Sevilla	Spain	Influential
9	Implications for spatial non-stationarity and the neighborhood effect averaging problem (NEAP) in green inequality research: evidence from three states in the USA	Arizona State University, Massachusetts Institute of Technology, Virginia Tech	United States	—
10	Personal Wellbeing Amid Pandemic Response: Impacts of Neighborhood Built Environment, Risk Communication and Health: Guo et al.	The Chinese University of Hong Kong	China	—
11	Spatial variations of the third and fourth COVID-19 waves in Hong Kong: A comparative study using built environment and socio-demographic characteristics	The Hong Kong Polytechnic University	China, Hong Kong	Influential
12	Effects of housing environments on COVID-19 transmission and mental health revealed by COVID-19 Participant Experience data from the all of US Research ...	—	—	—
13	Regression Discontinuity Analysis of Post-COVID-19 Reopening Effects on Urban Green Space Visitation: Evidence from Beijing and Shanghai	Peking University	China	—

No.	Citing paper	Citing institution(s)	Country	S2
14	The role of functional urban areas in the spread of COVID-19 Omicron (Northern Spain)	Universidad de Cantabria, Valdecilla Biomedical Research Institute	Spain	—
15	Economic resilience during COVID-19: The case of food retail businesses in Seattle, Washington	—	—	—
16	A geographical information system model to define COVID-19 problem areas with an analysis in the socio-economic context at the regional scale in the North of Spain	Universidad de Cantabria	Spain	—
17	Scale-specific effects of urban landscape pattern on the COVID-19 epidemic in Hangzhou, China	Hangzhou Center for Disease Control and Prevention, Zhejiang Sci-Tech University	China	**Influential**
18	"What should be computed" for supporting post-pandemic recovery policymaking? A life-oriented perspective	Hiroshima University	Japan	—
19	Relationship between urban form and COVID-19 severity: impact of compactness during the lockdown and post-lockdown periods	The University of Memphis	United States	—
20	Rethinking Urban Development and Built Environment Attributes in the Post-Pandemic World: A Case of High-Density Hong Kong	The University of Hong Kong	Hong Kong	—
21	Bayesian Network Integration with GIS for the Analysis of Areas Vulnerable to the Outbreak of COVID-19 in Bangkok, Thailand	Chiang Mai Rajabhat University	Thailand	—
22	ANALYSIS FACTORS AFFECTING COVID-19 MORTALITY USING COUNT REGRESSION	Feng Chia University, Sebelas Maret University	Indonesia, Taiwan	—
23	GREEN SPACE AVAILABILITY AND ONSET RISK OF COVID-19 IN HONG KONG: A SPATIAL JUSTICE PERSPECTIVE	Hong Kong Polytechnic University, The Hong Kong Polytechnic University	China, Hong Kong	—

Independent citing papers only; self- and co-author citations excluded. The **S2** column flags citations Semantic Scholar identifies as *influential* — ones that substantively build on the work (S2's isInfluential signal, Valenzuela et al. 2015) — the "built on / relied upon" pattern the AAO credits. Counsel should quote the citing text for the strongest of these.

D. Citing-Institution Prestige & Geography

Top citing institutions

Institution	Country	World ranking	Citing papers
Chinese University of Hong Kong	China	SCImago #163 · THE =41 · QS =32	8
Hong Kong Polytechnic University	Hong Kong	SCImago #256 · THE 80 · QS 54	6
The Hong Kong Polytechnic University	Hong Kong	SCImago #256 · THE 80 · QS 54	5
The Chinese University of Hong Kong	China	SCImago #163 · THE =41 · QS =32	4

Institution	Country	World ranking	Citing papers
Hiroshima University	Japan	SCImago #1938 · THE 601–800 · QS =480	3
Peking University	China	SCImago #11 · THE 13 · QS 14	3
University of Exeter	United Kingdom	SCImago #679 · THE =170 · QS =155	3
China University of Petroleum, East China	China	—	2
Ulsan National Institute of Science and Technology (UNIST)	South Korea	SCImago #1215 · THE 201–250 · QS =310	2
Universidad de Cantabria	Spain	SCImago #2910	2
The University of Hong Kong	Hong Kong	SCImago #195 · THE 33 · QS 11	2
Chinese University of Hong Kong, Shenzhen	China	—	2
George Mason University	United States	SCImago #1399 · THE 401–500 · QS 951-1000	2
American International University-Bangladesh	Bangladesh	SCImago #6326 · THE 1201–1500 · QS 1401+	1
Utrecht University	Netherlands	SCImago #162 · QS =103	1

Geographic distribution of citing authors

Country	Citing papers
China	29
United States	13
Hong Kong	8
Spain	4
South Korea	4
United Kingdom	4
Japan	3
Netherlands	2
Sri Lanka	2
Pakistan	2
Iraq	2
Nigeria	2

Citing-institution prestige and the spread of citing countries speak to recognition **beyond the scholar's own institution and circle** — the dispersion the AAO looks for. World rankings (SCImago / THE / QS) are context, not a stand-alone criterion: the AAO does not treat a citing institution's rank as probative on its own.

F. AAO Precedent Considerations

Pre-filing self-check (AAO denial patterns)

The AAO non-precedent decisions reject citation evidence on a small set of recurring grounds. Confirm the petition addresses each before filing:

- ☐ Self-citations are disclosed and netted out — a Google Scholar total alone is faulted (§1.1).
- ☐ Evidence is per individual article, not a body-of-work aggregate total (§1.2).
- ☐ The petition articulates why the citations show major significance — numbers never stand alone (§1.5).
- ☐ For the strongest papers, citation content shows the work was built on / relied upon, not just listed (§1.6, §2.2).
- ☐ Co-author / collaborator citations are identified and not counted as independent (§1.7).
- ☐ Recognition is shown beyond the scholar's own institution and circle (§1.8).
- ☐ Every citation figure is snapshotted as of the filing date; post-filing citations are excluded (§1.9).
- ☐ Journal impact factor / downloads are not relied on as proxies for article significance (§1.10, §1.12).
- ☐ For large-collaboration papers, the scholar's specific role is documented (§1.13).
- ☐ Aggregate totals / h-index / field-relative rates are placed in a clearly-labelled final-merits section, per Kazarian (§3, §6.1.7).

Disclaimer

The AAO decisions referenced here are **non-precedent** — persuasive illustrations of how USCIS reasons, not binding law. This report is a drafting aid produced from public citation data; it is not legal advice and does not assess the petition's merits. All analysis must be reviewed by qualified immigration counsel.

G. Citation Evidence Index

Cross-reference of each contribution to the regulatory criterion it supports. Counsel should map these to the petition's exhibit numbers.

Contribution	Core paper	Indep. cites	Supports
Contribution 1	Analysis of long-term aerosol optical properties combining AERONET sunphotometer and satellite-based observations in Hong Kong	11	8 CFR 204.5(i)(3) — Outstanding Researcher
Contribution 2	Exploring the spatiotemporal evolution patterns of Urban Heat Island with a network-based approach	0	8 CFR 204.5(i)(3) — Outstanding Researcher
Contribution 3	Investigating the relationship between the built environment and relative risk of COVID-19 in Hong Kong	23	8 CFR 204.5(i)(3) — Outstanding Researcher