Citation Evidence Report

EB-2 NIW Petition — National Interest Waiver

Matter of Dhanasar · Prong 2 (well-positioned)

Xiaodan Wang

Washington University in St. Louis

Google Scholar profile

Generated 2026-05-21 by CiteMap. This report organises Google Scholar citation data into the structure USCIS adjudicators apply to Prong 2 of Matter of Dhanasar (the petitioner is well positioned to advance the proposed endeavor) — the prong where past citation evidence is most probative. 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

113	131	19	6
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.

84.4% independent of 32 classified citing papers

Citation type	Count
Independent	27
Self-citation	5
Co-author	0
Same-institution	0

81 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 established a foundational framework for analyzing spatiotemporal neurovascular coupling in awake and anesthetized mice, subsequently extending this model to characterize arousal dynamics and psychedelic-induced alterations in brain function.

The researcher's contribution centers on elucidating the complex spatiotemporal relationships between neuronal, metabolic, and hemodynamic signals. This line of work is anchored by a 2024 core paper that examines these interactions in both awake and anesthetized mouse brains, providing a critical baseline for understanding neurovascular coupling under varying states of consciousness.

This research appears to address the challenge of integrating disparate physiological signals to map brain dynamics accurately. By building on this foundation, the researcher published follow-up studies in 2025 that apply this framework to broader contexts. One study proposes arousal as a universal embedding for spatiotemporal brain dynamics, while another investigates how psychedelic 5-HT2A receptor agonism differentially affects neuronal and hemodynamic measures, suggesting a versatile application of the initial methodological approach.

The significance of this work is evidenced by its rapid uptake in the scientific community. The 2025 paper on arousal has garnered 62 citations, indicating strong interest in the proposed embedding framework. Furthermore, analysis of citing literature reveals that 84.4% of citations originate from independent researchers, demonstrating that the field recognizes the utility and originality of this researcher's contributions beyond their immediate institutional circle.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 19 · **1 flagged influential by Semantic Scholar**

CORE PAPER

Spatiotemporal relationships between neuronal, metabolic, and hemodynamic signals in the awake and anesthetized mouse brain

2024 · Cell Reports 43 (9), 2024 · 18 citations (GS)

No.	Citing paper	Citing institution(s)	Country	S2
1	Cerebral blood flow is modulated by astrocytic cAMP elevation independently of IP3R2-mediated Ca2+ signaling in mice	Gunma University Graduate School of Medicine, Institute of Science Tokyo, Kyoto University	Denmark, Japan	—
2	Electroconvulsive therapy generates a postictal wave of spreading depolarization in mice and humans	Allen Institute, University of Pennsylvania	United States	**Influential**
3	Contributions of synaptic glutamate versus neuronal spiking activity to cerebral vascular responses in awake mice	University of Pittsburgh	United States	—

Independent citing papers only; self- and co-author citations excluded. The **S2** column carries Semantic Scholar's read of each citation — *Methodology / Result* (the citing work used the method or built on the finding — the "built on / relied upon" pattern the AAO credits), *Influential* (S2's isInfluential signal, Valenzuela et al. 2015), or *Background* (a passing mention).

FOLLOW-UP WORK

Arousal as a universal embedding for spatiotemporal brain dynamics

2025 · Nature 647 (8089), 454-461, 2025 · 62 citations (GS)

Field-normalised: 35 Semantic Scholar citations place it in the top 5% of Psychology papers from 2025 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	The brain's action-mode network	Washington University School of Medicine	United States	—
2	Action-mode subnetworks for decision-making, action control, and feedback	New York University Medical Center, University of California San Diego, University of Minnesota Medical School	United States	—
3	Neurovascular coupling: a review of spontaneous neocortical dynamics linking neuronal activity to hemodynamics and what we have learned from the rodent brain	Emory University, Georgia Institute of Technology and Emory University	United States	—
4	Interactions across hemispheres in prefrontal cortex reflect global cognitive processing	Carnegie Mellon University	United States	—
5	Topological signatures of brain dynamics: persistent homology reveals individuality and brain–behavior links	Beijing Normal University, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, Tianjin University	China	—
6	Computational model of neurogliovascular unit activity integrating ascending arousal system and local neurotransmitter effects	Kursk State University	Russia	—
7	A cortical locus for modulation of arousal states	Rutgers University, Universite Laval	Canada, United States	—
8	Two-shot learning of multiple strange attractors	Deutsches Zentrum für Luft- und Raumfahrt (DLR), Ludwig-Maximilians-Universität, University College Cork	Germany, Ireland	—
9	Fast and principled equation discovery from chaos to climate	Durham University, Zhejiang University	China, United Kingdom	—
10	Parametric Interpolation of Dynamic Mode Decomposition for Predicting Nonlinear Systems	Stanford University, The Ohio State University	United States	—
11	On the Unique Recovery of Transport Maps and Vector Fields from Finite Measure-Valued Data	Cornell University	United States	—
12	Linking reaction time variability to physiological markers of arousal across timescales	Carnegie Mellon University	United States	—
13	System identification and surrogate data analyses imply approximate Gaussianity and non-stationarity of resting-brain dynamics	Doshisha University, Gunma University	Japan	—

Independent citing papers only; self- and co-author citations excluded. The **S2** column carries Semantic Scholar's read of each citation — *Methodology / Result* (the citing work used the method or built on the finding — the "built on / relied upon" pattern the AAO credits), *Influential* (S2's isInfluential signal, Valenzuela et al. 2015), or *Background* (a passing mention).

FOLLOW-UP WORK

Psychedelic 5-HT2A receptor agonism alters neurovascular coupling and differentially affects neuronal and hemodynamic measures of brain function

2025 · Nature neuroscience, 1-14, 2025 · 12 citations (GS)

Field-normalised: 11 Semantic Scholar citations place it in the top 5% of Psychology papers from 2025 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Psilocybin shapes the slow, global propagation of brain activity over the cortical layout of 5HT2a receptors	Oslo University Hospital	Norway	—
2	Knocking at the Doors of Perception: Relating LSD Effects on Low-Frequency Fluctuations and Regional Homogeneity to Receptor Densities in fMRI	Technische Universität Dresden, University of Florence, University of Pavia	Germany, Italy	—
3	Molecular, haemodynamic, and functional effects of LSD in the human brain	Rigshospitalet	Denmark	—

Independent citing papers only; self- and co-author citations excluded. The **S2** column carries Semantic Scholar's read of each citation — *Methodology / Result* (the citing work used the method or built on the finding — the "built on / relied upon" pattern the AAO credits), *Influential* (S2's isInfluential signal, Valenzuela et al. 2015), or *Background* (a passing mention).

D. Citing-Institution Prestige & Geography

Top citing institutions

Institution	Country	World ranking	Citing papers
Washington University in St. Louis	United States	THE 67 · QS 167	4
Allen Institute	United States	—	3
Cornell University	United States	SCImago #61 · THE =18 · QS 16	3
Washington University School of Medicine	United States	—	3
Carnegie Mellon University	United States	SCImago #266 · THE 24 · QS 52	2
Doshisha University	Japan	SCImago #5479 · THE 1501+ · QS 1201-1400	1
Universite Laval	Canada	THE 401–500 · QS =469	1
University of Tennessee	United States	—	1
St. John's Neuroscience Institute	United States	—	1
Morsani College of Medicine	United States	—	1
The Affiliated Cancer Hospital of Nanjing Medical University, Jiangsu Cancer Hospital, Jiangsu Institute of Cancer Research	China	—	1
Kursk State University	Russia	—	1
Deutsches Zentrum für Luft- und Raumfahrt (DLR)	Germany	SCImago #1073	1
Emory University	United States	SCImago #217 · THE 102 · QS 182	1
Gunma University	Japan	SCImago #3527 · THE 1501+ · QS 1201-1400	1

Geographic distribution of citing authors

Country	Citing papers
United States	20
China	3
Denmark	2
Japan	2
Germany	2
Russia	2
Italy	1
Canada	1
Ireland	1
Belgium	1
Norway	1
United Kingdom	1

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	Spatiotemporal relationships between neuronal, metabolic, and hemodynamic signals in the awake and anesthetized mouse brain	19	Dhanasar — Prong 2 (well-positioned)