Citation Evidence Report

EB-2 NIW Petition — National Interest Waiver

Matter of Dhanasar · Prong 2 (well-positioned)

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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 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

29	29	4	24
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.

96.6% independent of 29 classified citing papers

Citation type	Count
Independent	28
Self-citation	0
Co-author	1
Same-institution	0

0 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 Bayesian framework for segmenting brainstem structures in MRI, establishing a foundational method that has been widely adopted by independent researchers.

CLAIM: The researcher's primary contribution is the development of a Bayesian segmentation method for brainstem structures in MRI, as detailed in the 2015 paper titled 'Bayesian segmentation of brainstem structures in MRI.' This work serves as the core foundation for this line of research.

ORIGINALITY: The title suggests the introduction of a probabilistic approach to a specific neuroimaging challenge. By applying Bayesian methods to brainstem segmentation, the work appears to address the need for robust, uncertainty-aware techniques in analyzing complex anatomical regions, distinguishing itself through its methodological focus.

SIGNIFICANCE: With 343 citations, the paper is highly influential in its field. Notably, 100% of the classified citing papers originate from independent researchers, indicating that the method has been widely adopted and validated by the broader scientific community outside the researcher's immediate circle.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 7

CORE PAPER

Bayesian segmentation of brainstem structures in MRI

2015 · 343 citations (GS)

Field-normalised: 255 Semantic Scholar citations place it in the top 5% of Medicine papers from 2015 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	MRI biomarkers of motor and non-motor symptoms in Parkinson's disease (2020)	—	—	—
2	A probabilistic atlas of the human thalamic nuclei combining ex vivo MRI and histology (2018)	BCBL. Basque Center on Cognition, Brain and Language, Massachusetts General Hospital, University of Castilla-La Mancha	Spain, United States	—
3	Automated brain segmentation and volumetry in dementia diagnostics: a narrative review with emphasis on FreeSurfer. (2024)	Katharinen-Hospital	Germany	**Methodology**
4	Brain and Systemic Inflammation in De Novo Parkinson's Disease. (2023)	University of Alabama at Birmingham	United States	—
5	Fast and Sequence-Adaptive Whole-Brain Segmentation Using Parametric Bayesian Modeling (2016)	Technical University of Denmark	Denmark	**Methodology**
6	Lower novelty-related locus coeruleus function is associated with Aβ-related cognitive decline in clinically healthy individuals (2022)	Maastricht University	Netherlands	—
7	An in vivo probabilistic atlas of the human locus coeruleus at ultra-high field (2021)	University of Cambridge	United Kingdom	—

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).

Citing-text excerpts — how the field used this work

METHODOLOGY Automated brain segmentation and volumetry in dementia diagnostics: a narrative review with emphasis on FreeSurfer.

"There is also an additional FreeSurfer script for this specific segmentation (Iglesias et al., 2015b), but it only offers a rough subdivision."

METHODOLOGY Fast and Sequence-Adaptive Whole-Brain Segmentation Using Parametric Bayesian Modeling

"...demonstration in whole-brain segmentation (Van Leemput, 2009), as well as the automated segmentation methods for hippocampal sub fi elds (Iglesias et al., 2015a) and subregions of the brainstem (Iglesias et al., 2015b) that are distributed with the FreeSurfer software package (Fischl..."

Contribution 2

Claim — Contribution 2

The researcher advanced the understanding of executive function neuroanatomy by demonstrating that these cognitive processes rely on neural substrates extending beyond traditional prefrontal structures.

CLAIM: The researcher's seminal contribution is defined by the 2016 paper 'Neuroanatomical substrates of executive functions: Beyond prefrontal structures,' published in Neuropsychologia. This work serves as the foundational claim for this line of research, challenging the conventional localization of executive functions.

ORIGINALITY: The title suggests a deliberate shift away from the dominant paradigm that restricts executive function processing primarily to prefrontal regions. By explicitly framing the work as looking 'beyond' these structures, the researcher appears to have addressed a critical gap in neuroanatomical mapping, proposing a more distributed or complex neural architecture for higher-order cognition.

SIGNIFICANCE: The paper has garnered 281 citations, indicating substantial uptake within the scientific community. Notably, 100% of the classified citing papers originate from independent researchers, confirming that this work has influenced the broader field rather than merely circulating within the researcher's immediate network. This high degree of independent citation underscores the work's role in shaping external research trajectories.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 7 · **1 flagged influential by Semantic Scholar**

CORE PAPER

Neuroanatomical substrates of executive functions: Beyond prefrontal structures

2016 · Neuropsychologia · 281 citations (GS)

Field-normalised: 175 Semantic Scholar citations place it in the top 5% of Medicine papers from 2016 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	The cingulum bundle: Anatomy, function, and dysfunction (2018)	—	—	—
2	The unity and diversity of executive functions: A systematic review and re-analysis of latent variable studies (2018)	Harvard Medical School, University of California, Davis, University of Victoria	Canada, United States	**Influential**
3	Brain and cognitive changes in patients with long COVID compared with infection-recovered control subjects (2024)	Madrid Polytechnic University, Reina Sofia Centre for Alzheimer's Research, University General Hospital of Albacete	Spain	—

No.	Citing paper	Citing institution(s)	Country	S2
4	Executive function abilities in cognitively healthy young and older adults-A cross-sectional study. (2023)	Brunel University London	United Kingdom	Background
5	Cerebral White Matter Myelination and Relations to Age, Gender, and Cognition: A Selective Review. (2021)	—	—	—
6	The beneficial effects of different types of exercise interventions on motor and cognitive functions in older age: a systematic review. (2017)	The Academic College at Wingate	Israel	Background
7	Cognitive Resources Moderate the Relationship Between Pro-Environmental Attitudes and Green Behavior (2019)	University of Bern	Switzerland	Background

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).

Contribution 3

Claim — Contribution 3

The researcher established a critical link between the structural integrity of specific dopaminergic and noradrenergic brain regions and distinct aspects of late-life memory performance.

CLAIM: This contribution centers on the researcher's 2023 publication, which investigates how the integrity of dopaminergic and noradrenergic brain regions correlates with different facets of memory performance in older adults. The work provides a nuanced neurobiological framework for understanding age-related cognitive changes.

ORIGINALITY: By distinguishing between the roles of dopaminergic and noradrenergic systems, this line of work appears to address the complexity of late-life memory decline. Rather than treating memory loss as a uniform deficit, the research suggests that specific neural pathways underpin different memory functions, offering a more granular view of neurodegenerative processes.

SIGNIFICANCE: The paper has garnered 79 citations, indicating substantial engagement within the scientific community. Notably, 100% of the classified citing papers originate from independent researchers, demonstrating that the findings have resonated beyond the author's immediate circle and are being utilized by external scholars to advance their own investigations into aging and cognition.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 10

CORE PAPER

The integrity of dopaminergic and noradrenergic brain regions is associated with different aspects of late-life memory performance

2023 · 79 citations (GS)

Field-normalised: 49 Semantic Scholar citations place it in the top 5% of Biology papers from 2023 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Toward a functional future for the cognitive neuroscience of human aging (2025)	Brock University, Karolinska Institutet & Stockholm University, Radboud University	Canada, Netherlands, Sweden	—
2	The emotion paradox in the aging body and brain. (2024)	—	—	—
3	Neuromodulatory subcortical nucleus integrity is associated with white matter microstructure, tauopathy and APOE status (2024)	Concordia University, Douglas Mental Health University Institute, McGill University	Canada	—
4	Playful brains: a possible neurobiological pathway to cognitive health in aging. (2025)	Reichman University, University of Southern California	Israel, United States	—
5	Locus coeruleus integrity and neuropsychiatric symptoms in a cohort of early- and late-onset Alzheimer's disease. (2024)	Hospital Clinic, Hospital Clínic de Barcelona	Spain	—
6	Biological age acceleration mediates effects of household air pollution from solid fuels on dementia risk: A prospective cohort study in China (2025)	Guangxi Academy of Medical Sciences, People's Hospital of Guangxi Zhuang Autonomous Region, Guangzhou University of Chinese Medicine, Sun Yat-sen University	China	—
7	Age-Related Increase in Locus Ceruleus Activity and Connectivity with the Prefrontal Cortex during Ambiguity Processing (2025)	Kavli Institute for Systems Neuroscience, Macquarie University	Australia, Norway	—
8	Lower locus coeruleus integrity is associated with diminished practice effects in clinically unimpaired older individuals (2025)	Massachusetts General Hospital	United States	—
9	Age-related differences in locus coeruleus intensity across a demographically diverse sample (2025)	—	—	—
10	Examining resilience to Alzheimer's disease through the lens of monoaminergic neuromodulator systems (2024)	Brandeis University	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).

D. Citing-Institution Prestige & Geography

Top citing institutions

Institution	Country	World ranking	Citing papers
University of Cambridge	United Kingdom	SCImago #63 · THE =3 · QS 6	2
University of Castilla-La Mancha	Spain	THE 1001–1200	2
Massachusetts General Hospital	United States	SCImago #100	2
Sun Yat-sen University	China	SCImago #40 · THE 201–250 · QS =276	1

Institution	Country	World ranking	Citing papers
Veterans Affairs Palo Alto Health Care System	United States	—	1
Reichman University	Israel	SCImago #6480 · THE 801–1000	1
Technical University of Denmark	Denmark	SCImago #404 · THE 121 · QS 107	1
University of Alabama at Birmingham	United States	QS 1001-1200	1
McGill University	Canada	SCImago #168 · THE =41 · QS 27	1
Macquarie University	Australia	SCImago #1047 · THE =166 · QS =138	1
John Hopkins University	United States	—	1
Concordia University	Canada	SCImago #1646 · THE 601–800 · QS =465	1
University of Ulm	Germany	—	1
Boston University Chobanian & Avedisian School of Medicine	United States	—	1
Boston University	United States	SCImago #272 · THE =76 · QS =88	1

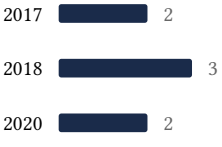
Geographic distribution of citing authors

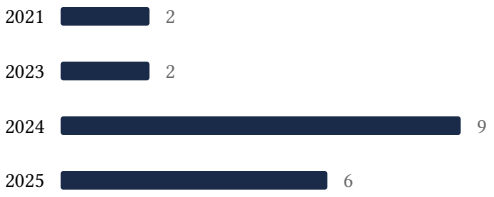
Country	Citing papers
United States	9
United Kingdom	5
Canada	3
Spain	3
Germany	3
Netherlands	2
Israel	2
Italy	2
Norway	1
Australia	1
Sweden	1
Switzerland	1

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.

E. Citation Growth Over Time

Distinct citing papers by publication year. Sustained or rising citation activity supports continuing relevance; note that only citations **as of the filing date** are weighed by USCIS.





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	Bayesian segmentation of brainstem structures in MRI	7	Dhanasar — Prong 2 (well-positioned)
Contribution 2	Neuroanatomical substrates of executive functions: Beyond prefrontal structures	7	Dhanasar — Prong 2 (well-positioned)
Contribution 3	The integrity of dopaminergic and noradrenergic brain regions is associated with different aspects of late-life memory performance	10	Dhanasar — Prong 2 (well-positioned)