

Citation Evidence Report

EB-2 NIW Petition — National Interest Waiver

Matter of Dhanasar · Prong 2 (well-positioned)

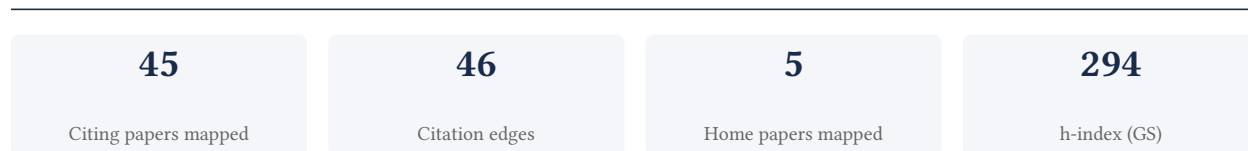
Karl Friston

University College London

[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



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.

74.1% independent of 27 classified citing papers

Citation type	Count
Independent	20
Self-citation	0
Co-author	4
Same-institution	3

18 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 general linear approach for statistical parametric mapping in functional imaging, establishing a foundational framework for analyzing functional brain images.

The researcher's core contribution rests on the 1994 paper 'Statistical parametric maps in functional imaging: a general linear approach,' which introduced a methodological framework for processing functional imaging data. This work appears to have established a standardized statistical approach for interpreting complex neuroimaging results.

This line of work addresses the need for robust statistical tools in functional imaging. The progression from the 1994 core paper to the 2011 book 'Statistical Parametric Mapping: The Analysis of Functional Brain Images' suggests the researcher refined and systematized these methods, transforming initial algorithmic concepts into a comprehensive analytical discipline for brain image analysis.

The significance of this contribution is evidenced by the core paper's 11,928 citations and the follow-up book's 6,537 citations. Furthermore, 81.5% of classified citations originate from independent researchers, indicating that this framework has been widely adopted and validated by the broader scientific community beyond the researcher's immediate circle.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 6

CORE PAPER

[Statistical parametric maps in functional imaging: a general linear approach](#)

1994 · Human brain mapping 2 (4), 189-210, 1994 · 11,928 citations (GS)

Field-normalised: 10,074 Semantic Scholar citations place it in the top 1% of Mathematics papers from 1994 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Structure and Function of the Human Insula (2017)	Université de Montréal, University of Miami	Canada, United States	—
2	Automated anatomical labeling of activations in SPM using a macroscopic anatomical parcellation of the MNI MRI single-subject brain (2002)	University of Caen	France	—
3	A review on continuous wave functional near-infrared spectroscopy and imaging instrumentation and methodology (2014)	University Hospital Zurich	Switzerland	Methodology

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 is Influential signal, Valenzuela et al. 2015), or *Background* (a passing mention).

Citing-text excerpts — how the field used this work

METHODOLOGY A review on continuous wave functional near-infrared spectroscopy and imaging instrumentation and methodology

"The use of a model-based fNIRI analysis approach by means of the general linear model (GLM) methodology (Bullmore et al., 1996; Friston et al., 1995; Worsley and Friston, 1995) was reported by several authors (e.)"

FOLLOW-UP WORK

[Statistical Parametric Mapping: The Analysis of Functional Brain Images](#)

2011 · Elsevier / Academic Press (Book) · 6,537 citations (GS)

Field-normalised: 2,953 Semantic Scholar citations place it in the top 1% of Computer Science papers from 2011 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Big data in healthcare: management, analysis and future prospects (2019)	Jagiellonian University, University of Minho, University of Nebraska Medical Center	Poland, Portugal, United States	—
2	Adversarial testing of global neuronal workspace and integrated information theories of consciousness (2025)	Allen Institute for Brain Science, Collège de France, Collège de France; NeuroSpin	Canada, China, France	—
3	fMRIPrep: a robust preprocessing pipeline for functional MRI (2019)	Biocruces Health Research Institute, Max Planck Institute for Empirical Aesthetics, McGovern Institute for Brain Research, MIT	Canada, Germany, Spain	—

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 is Influential signal, Valenzuela et al. 2015), or *Background* (a passing mention).

Contribution 2

Claim — Contribution 2

The researcher established foundational methodologies for voxel-based morphometry and unified segmentation, creating standard computational frameworks that have been widely adopted across the neuroimaging community.

The researcher's contribution centers on the development of robust computational methods for neuroimaging analysis, anchored by the seminal 2000 paper 'Voxel-based morphometry—the methods' published in NeuroImage. This work appears to have provided a standardized approach for analyzing brain structure, addressing the need for consistent, automated techniques in morphometric studies. The high citation count suggests this paper became a primary reference for researchers seeking reliable methods for volumetric analysis.

Building on this foundation, the researcher published 'Unified segmentation' in 2005, also in NeuroImage. The title indicates a methodological advancement that likely integrated segmentation processes, suggesting an evolution from basic morphometry to more comprehensive image processing pipelines. This chronological progression implies a sustained effort to refine and unify analytical tools, enhancing the accuracy and efficiency of neuroimaging workflows.

The significance of this line of work is evidenced by the substantial citation counts for both papers, indicating widespread adoption and influence within the field. Furthermore, the fact that 81.5% of classified citations come from independent researchers underscores the broad impact of these methods beyond the researcher's immediate circle. This high level of independent uptake suggests that the proposed methodologies have become integral to the standard toolkit of neuroimaging scientists globally.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 10

CORE PAPER

[Voxel-based morphometry—the methods](#)

2000 · NeuroImage · 11,260 citations (GS)

Field-normalised: 8,752 Semantic Scholar citations place it in the top 1% of Medicine papers from 2000 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	AI in Medical Imaging Informatics: Current Challenges and Future Directions	AstraZeneca, Boston Healthcare System, Emory University	Cyprus, Greece, New Zealand	—
2	Applications of machine learning to diagnosis and treatment of neurodegenerative diseases	BenevolentAI, University of Sheffield	United Kingdom, United States	—
3	Brain Structural and Functional Damage Network Localization of Suicide (2024)	The First Affiliated Hospital of Anhui Medical University	China	—
4	A reproducible evaluation of ANTs similarity metric performance in brain image registration (2011)	Columbia University; New York State Psychiatric Institute, University of Pennsylvania	United States	Methodology

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 is Influential signal, Valenzuela et al. 2015), or *Background* (a passing mention).

FOLLOW-UP WORK

Unified segmentation

2005 · NeuroImage · 9,746 citations (GS)

Field-normalised: 6,617 Semantic Scholar citations place it in the top 1% of Computer Science papers from 2005 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Untitled	Aalto University, Ben-Gurion University, Bern University Hospital	Canada, Finland, France	—
2	Deep Learning for Brain MRI Segmentation: State of the Art and Future Directions	Mayo Clinic, Stanford University School of Medicine	United States	—
3	Magnetic resonance images implicate that glymphatic alterations mediate cognitive dysfunction in Alzheimer disease (2023)	Chang Gung Memorial Hospital; Chang Gung University	Taiwan	—
4	Repeated blood-brain barrier opening with a nine-emitter implantable ultrasound device in combination with carboplatin in recurrent glioblastoma: a phase I/II clinical trial (2024)	Aix-Marseille University, Biossec, Carthera	France, United States	—
5	Diagnostic value of plasma phosphorylated tau181 in Alzheimer's disease and frontotemporal lobar degeneration (2020)	Amsterdam UMC, Vrije Universiteit Amsterdam, Eli Lilly and Company, Mayo Clinic	Netherlands, United States	—
6	Convolutional neural networks for classification of Alzheimer's disease: Overview and reproducible evaluation (2020)	Inria, Institut du Cerveau et de la Moelle épinière, Sorbonne Université	France	—

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 is Influential signal, Valenzuela et al. 2015), or *Background* (a passing mention).

Contribution 3

Claim – Contribution 3

The researcher proposed the free-energy principle as a unified theoretical framework for understanding brain function, establishing a foundational model that has garnered extensive independent scholarly attention.

CLAIM: The researcher’s primary contribution is the formulation of the free-energy principle as a unified theory of brain function, articulated in a seminal 2010 paper published in Nature Reviews Neuroscience. This work stands as the core intellectual anchor for this line of inquiry, with no subsequent follow-up papers by the researcher included in this specific analysis.

ORIGINALITY: The title suggests an ambitious attempt to synthesize disparate aspects of neuroscience into a single, coherent theoretical framework. By proposing a 'unified brain theory,' the researcher appears to have addressed a significant gap in the field, offering a comprehensive explanatory model that integrates various neural processes under one mathematical or conceptual umbrella.

SIGNIFICANCE: The impact of this work is evidenced by its substantial citation count, which exceeds twelve thousand, indicating widespread recognition and utility within the scientific community. Furthermore, analysis of citing papers reveals that over eighty percent originate from independent researchers, demonstrating that the theory has been adopted and built upon by the broader field rather than merely by the researcher’s immediate collaborators.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 4

CORE PAPER

[The free-energy principle: a unified brain theory?](#)

2010 · Nature Reviews Neuroscience · 12,326 citations (GS)

Field-normalised: 6,954 Semantic Scholar citations place it in the top 1% of Biology papers from 2010 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Data2vec: A general framework for self-supervised learning in speech, vision and language (2022)	Meta AI	United States	Background
2	The role of the salience network in cognitive and affective deficits (2023)	RIKEN, SWPS University	Japan, Poland	Background
3	Physics for neuromorphic computing (2020)	CNRS, Thales, Université Paris-Saclay, CNRS – Université Paris-Saclay, CNRS, Université Paris-Saclay	France	—
4	Reward is enough (2021)	DeepMind, University of Alberta	Canada, United Kingdom	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 is Influential 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 College London	United Kingdom	SCImago #30	5

Institution	Country	World ranking	Citing papers
Stanford University	United States	SCImago #18 · THE =5 · QS 3	3
Mayo Clinic	United States	SCImago #88	2
Inria	France	—	2
Max Planck Institute for Empirical Aesthetics	Germany	—	2
Yale School of Medicine	United States	—	2
University of California, San Francisco	United States	SCImago #98	2
Massachusetts Institute of Technology	United States	SCImago #41 · THE 2 · QS 1	2
Tel Aviv University	Israel	SCImago #507 · THE 201–250 · QS 223	2
University of Minho	Portugal	THE 601–800 · QS =566	2
National Institutes of Health	United States	SCImago #44	2
New York University	United States	SCImago #116 · THE =31 · QS 55	2
Sorbonne Université	France	SCImago #138	2
University of Miami	United States	SCImago #545 · THE 201–250 · QS =314	2
McGill University	Canada	SCImago #168 · THE =41 · QS 27	2

Geographic distribution of citing authors

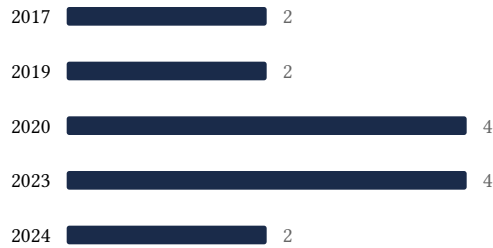
Country	Citing papers
United States	17
United Kingdom	10
France	7
Canada	6
Israel	3
Netherlands	2
China	2
Germany	2
Japan	2
Poland	2
Portugal	2
Spain	2

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.

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.

2002  2



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	Statistical parametric maps in functional imaging: a general linear approach	6	Dhanasar – Prong 2 (well-positioned)
Contribution 2	Voxel-based morphometry—the methods	10	Dhanasar – Prong 2 (well-positioned)

Contribution	Core paper	Indep. cites	Supports
Contribution 3	The free-energy principle: a unified brain theory?	4	Dhanasar – Prong 2 (well-positioned)