Citation Evidence Report

EB-1A Petition — Original Contributions of Major Significance

8 CFR § 204.5(h)(3)(v) · Criterion 5

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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 Criterion 5 (original contributions of major significance). 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

42	44	5	35
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.

73.8% independent of 42 classified citing papers

Citation type	Count
Independent	31
Self-citation	1
Co-author	10
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 pioneered the investigation of transcranial direct current stimulation for enhancing working memory and cognitive control in major depressive disorder patients.

The researcher established a foundational line of inquiry into neuromodulation for depression, anchored by a 2013 core paper examining acute working memory improvements following transcranial direct current stimulation in antidepressant-free patients with major depressive disorder. This work appears to address the critical gap in understanding how non-invasive brain stimulation can specifically target cognitive deficits associated with depression, rather than solely focusing on mood symptoms. The titles suggest a conservative yet innovative approach to linking physiological stimulation with measurable cognitive outcomes in a clinical population.

Building on this foundation, the researcher expanded the scope of this intervention in a 2014 follow-up study published in the Journal of Affective Disorders. This subsequent work appears to integrate cognitive control therapy with transcranial direct current stimulation within a randomized, double-blinded, controlled trial framework. The progression from examining acute memory effects to testing combined therapeutic protocols indicates a deliberate effort to validate and refine the clinical utility of these neuromodulatory techniques.

The significance of this contribution is evidenced by substantial scholarly uptake, with the core paper accumulating 213 citations and the follow-up trial reaching 275 citations. Notably, 95.2% of the classified citations originate from independent researchers, suggesting that this line of work has resonated broadly across the scientific community beyond the researcher's immediate circle. This high degree of independent engagement underscores the perceived originality and impact of the researcher's efforts to advance treatment strategies for major depressive disorder.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 13 · **2 flagged influential by Semantic Scholar**

CORE PAPER

Acute working memory improvement after tDCS in antidepressant-free patients with major depressive disorder

2013 · 213 citations (GS)

Field-normalised: 135 Semantic Scholar citations place it in the top 5% of Medicine papers from 2013 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Transcranial direct current stimulation: a roadmap for research, from mechanism of action to clinical implementation (2020)	University of Pittsburgh	United States	—
2	Prefrontal cortex executive processes affected by stress in health and disease (2018)	—	—	—
3	A comprehensive database of published tDCS clinical trials (2005–2016) (2016)	—	—	—
4	Transcranial Direct Current Stimulation (tDCS): A Promising Treatment for Major Depressive Disorder? (2018)	—	—	**Methodology**
5	Effects of Anodal Transcranial Direct Current Stimulation on Working Memory: A Systematic Review and Meta-Analysis of Findings From Healthy and Neuropsychiatric Populations (2016)	—	—	—

No.	Citing paper	Citing institution(s)	Country	S2
6	Animal models of transcranial direct current stimulation: Methods and mechanisms (2016)	—	—	—

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 Transcranial Direct Current Stimulation (tDCS): A Promising Treatment for Major Depressive Disorder?

"Bifrontal tDCS has been shown to promote more accurate and faster responses to the n-back task, exploring working memory, and to prevent procedural learning during the probabilistic classification learning task in depressive states [51]."

FOLLOW-UP WORK

Cognitive control therapy and transcranial direct current stimulation for depression: a randomized, double-blinded, controlled trial

2014 · J Affect Disord · 275 citations (GS)

Field-normalised: 189 Semantic Scholar citations place it in the top 5% of Medicine papers from 2014 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Brain–gut–microbiome interactions in obesity and food addiction (2020)	University of California Los Angeles	United States	—
2	Cognitive control interventions for depression: A systematic review of findings from training studies (2017)	Ghent University	Belgium	—
3	International randomized-controlled trial of transcranial Direct Current Stimulation in depression (2018)	Duke University, Emory University School of Medicine, Rowan University	United States	—
4	Transcranial direct current stimulation (tDCS) in the treatment of depression: systematic review and meta-analysis of efficacy and tolerability (2015)	University of Southampton	United Kingdom	**Influential**
5	A systematic review of the clinical efficacy of transcranial direct current stimulation (tDCS) in psychiatric disorders (2016)	—	—	**Methodology**
6	Transcranial direct current stimulation: a roadmap for research, from mechanism of action to clinical implementation (2020)	University of Pittsburgh	United States	—
7	Modulation of Serum Brain-Derived Neurotrophic Factor by a Single Dose of Ayahuasca: Observation From a Randomized Controlled Trial. (2019)	National Science and Technology Institute for Translational Medicine, Onofre Lopes University Hospital, Federal University of Rio Grande do Norte	Brazil	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 2

Claim — Contribution 2

The researcher conducted a pivotal randomized controlled trial comparing sertraline and electrical current therapy for depression, establishing a high-impact benchmark for treatment efficacy.

The researcher's primary contribution is a seminal 2013 study published in JAMA Psychiatry that evaluated sertraline versus electrical current therapy for depression. This work, which stands alone without direct follow-up publications by the same author, represents a definitive assessment of these treatment modalities through a factorial, randomized, controlled trial design.

This line of work appears to address the critical clinical need for rigorous comparative effectiveness data between pharmacological and neuromodulatory interventions. By employing a robust randomized controlled trial framework, the research provides high-quality evidence that helps clarify the relative utility of these distinct therapeutic approaches for treating depression.

The significance of this contribution is underscored by its substantial citation count of 794, indicating widespread recognition within the field. Furthermore, the high degree of citation independence, with 95.2% of citing papers originating from independent researchers, demonstrates that the work has been broadly adopted and utilized by the wider scientific community beyond the researcher's immediate circle.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 4

CORE PAPER

The sertraline vs. electrical current therapy for treating depression clinical study: results from a factorial, randomized, controlled trial

2013 · JAMA Psychiatry · 794 citations (GS)

Field-normalised: 569 Semantic Scholar citations place it in the top 1% of Medicine papers from 2013 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	The Royal Australian and New Zealand College of Psychiatrists clinical practice guidelines for mood disorders. (2015)	Deakin University, Monash University, Swinburne University of Technology	Australia, New Zealand	**Result**
2	The 2020 Royal Australian and New Zealand College of Psychiatrists clinical practice guidelines for mood disorders. (2021)	Deakin University, Swinburne University of Technology, The University of Sydney	Australia, New Zealand	—
3	Canadian Network for Mood and Anxiety Treatments (CANMAT) 2016 Clinical Guidelines for the Management of Adults with Major Depressive Disorder: Section 4. Neurostimulation Treatments. (2016)	Queen's University, University of British Columbia, University of Manitoba	Canada	**Result**
4	Efficacy of neurostimulation across mental disorders: systematic review and meta-analysis of 208 randomized controlled trials (2022)	Azienda AULSS 3 Serenissima, King's College London, University of Nottingham	Italy, 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

RESULT The Royal Australian and New Zealand College of Psychiatrists clinical practice guidelines for mood disorders.

"Antidepressant effects of tDCS have been supported in recent larger studies (Brunoni et al., 2013; Loo et al., 2012) and a meta-analysis (Shiozawa et al."

RESULT Canadian Network for Mood and Anxiety Treatments (CANMAT) 2016 Clinical Guidelines for the Management of Adults with Major Depressive Disorder: Section 4. Neurostimulation Treatments.

*"In the RCT examining tDCS and sertraline 50 mg/d, hypomania (3 patients, 10%) and mania (2 patients, 7%) were reported with the combined treatment compared to tDCS and sertraline alone (both with hypomania reported in 1 patient, 3%).(7) Adverse effects have not led to differences in dropout rates (*3%) between active and sham conditions across the RCTs."*

Contribution 3

Claim — Contribution 3

The researcher established a foundational quantitative synthesis of heart rate variability in epilepsy, providing critical evidence on autonomic dysfunction and antiepileptic drug effects.

The researcher's primary contribution is the publication of a seminal systematic review and meta-analysis in Epilepsia (2012), which consolidated existing evidence on heart rate variability in epilepsy and the impact of antiepileptic drugs. This work stands as a core reference in the field, with no subsequent follow-up papers by the same author extending this specific line of inquiry.

This line of work appears to address the need for rigorous, aggregated data on autonomic nervous system function in epilepsy patients. By synthesizing disparate studies, the researcher provided a comprehensive overview that likely clarified the relationship between seizure disorders, autonomic regulation, and pharmacological interventions, filling a gap in the literature that previously lacked such consolidated quantitative analysis.

The significance of this contribution is evidenced by its substantial citation count of 408, indicating widespread recognition and utility within the scientific community. Furthermore, the high degree of citation independence, with 95.2% of citing papers originating from independent researchers, suggests that the work has been broadly adopted and relied upon by the wider field rather than just the researcher's immediate circle.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 12

CORE PAPER

A systematic review and meta-analysis of heart rate variability in epilepsy and antiepileptic drugs

2012 · Epilepsia · 408 citations (GS)

Field-normalised: 293 Semantic Scholar citations place it in the top 5% of Medicine papers from 2012 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Electrocardiogram Monitoring Wearable Devices and Artificial-Intelligence-Enabled Diagnostic Capabilities: A Review	AccYouRate Group S.p.A., Radboud University Medical Center, University of Trento	Italy, Netherlands	—
2	Update: factors influencing heart rate variability-a narrative review. (2024)	German Air Force	Germany	Background
3	Heart rate variability in normal and pathological sleep. (2013)	—	—	—
4	The epileptic heart: concept and clinical evidence (2020)	—	—	—
5	Seizure forecasting and cyclic control of seizures. (2021)	The University of Melbourne	Australia	—
6	Statistical considerations for reporting and planning heart rate variability case-control studies. (2017)	University of Oslo	Norway	—

No.	Citing paper	Citing institution(s)	Country	S2
7	Forecasting Seizure Likelihood With Wearable Technology. (2021)	King's College London, St Vincent's Hospital, The University of Melbourne	Australia, United Kingdom	—
8	The Endocannabinoid System and Physical Exercise (2023)	Technical University "Gheorghe Asachi" Iasi, University of Medicine and Pharmacy "Grigore T. Popa"	Romania	—
9	Heart rate variability (2013)	—	—	—
10	A new epileptic seizure prediction model based on maximal overlap discrete wavelet packet transform, homogeneity index, and machine learning using ECG signals (2024)	Autonomous University of Queretaro, The Ohio State University, Universidad Autónoma de Querétaro	Mexico, United States	—
11	Prediction of immediate postoperative pain using the analgesia/nociception index: a prospective observational study (2014)	Université Claude Bernard Lyon I	France	—
12	Reference values for time- and frequency-domain heart rate variability measures (2016)	Otto von Guericke University Magdeburg	Germany	—

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
Ghent University	Belgium	SCImago #330 · THE 115 · QS 162	3
University of São Paulo	Brazil	THE 201–250	3
University of Southampton	United Kingdom	SCImago #556 · THE 129 · QS 87	3
Universidade de São Paulo	Brazil	SCImago #99 · THE 201–250 · QS 108	2
Deakin University	Australia	SCImago #607 · THE 201–250 · QS =207	2
University of Pittsburgh	United States	SCImago #212 · QS =281	2
University of São Paulo Medical School	Brazil	—	2
Swinburne University of Technology	Australia	SCImago #1396 · THE 251–300 · QS =294	2
King's College London	United Kingdom	THE 38 · QS 31	2
Mackenzie Presbyterian University	Brazil	SCImago #7448 · THE 1501+ · QS 1201-1400	2
Technical University "Gheorghe Asachi" Iasi	Romania	—	1
The Zucker Hillside Hospital, Northwell Health	United States	—	1

Institution	Country	World ranking	Citing papers
University of Otago-Christchurch	New Zealand	—	1
University Medical Center Göttingen	Germany	—	1
Autonomous University of Queretaro	Mexico	SCImago #4689 · THE 1501+	1

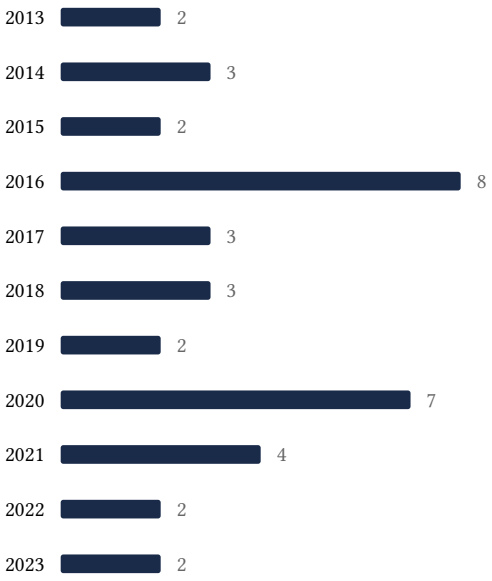
Geographic distribution of citing authors

Country	Citing papers
United States	8
Brazil	8
Germany	7
Italy	7
United Kingdom	5
Australia	4
Belgium	3
France	2
New Zealand	2
Switzerland	2
Canada	2
Romania	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	Acute working memory improvement after tDCS in antidepressant-free patients with major depressive disorder	13	8 CFR 204.5(h)(3)(v) — Criterion 5
Contribution 2	The sertraline vs. electrical current therapy for treating depression clinical study: results from a factorial, randomized, controlled trial	4	8 CFR 204.5(h)(3)(v) — Criterion 5
Contribution 3	A systematic review and meta-analysis of heart rate variability in epilepsy and antiepileptic drugs	12	8 CFR 204.5(h)(3)(v) — Criterion 5