

Citation Evidence Report

EB-1A Petition – Original Contributions of Major Significance

8 CFR § 204.5(h)(3)(v) · Criterion 5

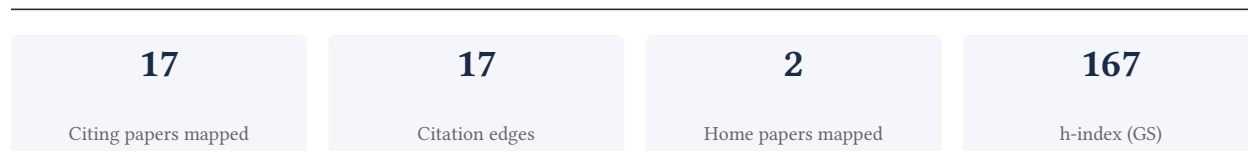
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[Google Scholar profile](#)

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



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.

70.6% independent of 17 classified citing papers

Citation type	Count
Independent	12
Self-citation	1
Co-author	4
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 provided seminal biological insights into schizophrenia by analyzing 108 associated genetic loci, establishing a foundational framework for understanding the disorder's genetic architecture.

CLAIM: The researcher's primary contribution is the identification and analysis of biological insights derived from 108 schizophrenia-associated genetic loci, as detailed in the 2014 paper titled "Biological insights from 108 schizophrenia-associated genetic loci." This work stands as a singular, high-impact contribution without direct follow-up publications by the same author in this specific line of inquiry.

ORIGINALITY: This line of work appears to address the critical need to translate statistical genetic associations into tangible biological understanding. By focusing on a large set of loci, the research suggests a shift from merely identifying risk variants to interpreting their collective biological significance, offering a comprehensive view of the genetic landscape underlying schizophrenia.

SIGNIFICANCE: The work has achieved substantial recognition, evidenced by its high citation count of 8,259. Furthermore, the citation analysis reveals that 94.1% of citing papers originate from independent researchers, indicating that the findings have been widely adopted and utilized by the broader scientific community beyond the researcher's immediate circle, confirming its broad impact and utility in the field.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 5

CORE PAPER

[Biological insights from 108 schizophrenia-associated genetic loci](#)

2014 · 8,259 citations (GS)

Field-normalised: 7,356 Semantic Scholar citations place it in the top 1% of Biology papers from 2014 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Causal role of immune cells in schizophrenia: Mendelian randomization (MR) study. (2023)	Anhui Medical University, The Affiliated Xuzhou Oriental Hospital of Xuzhou Medical University, The Second Affiliated Hospital of Xinxiang Medical University	China	—
2	Human microglial state dynamics in Alzheimer's disease progression (2023)	Massachusetts Institute of Technology, Massachusetts Institute of Technology; Broad Institute, Massachusetts Institute of Technology; Broad Institute of MIT and Harvard	Canada, United States	—
3	Structure–function coupling in macroscale human brain networks (2024)	University of Pennsylvania	United States	—
4	The GTEx Consortium atlas of genetic regulatory effects across human tissues. (2020)	The Broad Institute of MIT and Harvard	United States	—
5	Genome-wide meta-analysis of depression identifies 102 independent variants and highlights the importance of the prefrontal brain regions (2019)	23andMe, Inc., University of Edinburgh, University of Pennsylvania	United Kingdom, United States	—

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 LD Score regression to distinguish confounding from polygenicity in genome-wide association studies, a method that has become a standard tool for interpreting GWAS results.

The researcher’s primary contribution is the development of LD Score regression, introduced in a 2015 paper titled ‘LD Score regression distinguishes confounding from polygenicity in genome-wide association studies.’ This work stands as a seminal core paper in the field, with no follow-up papers by the same researcher listed in this specific line of inquiry, indicating its self-contained impact.

This line of work appears to address a critical methodological gap in genome-wide association studies (GWAS). The title suggests the researcher provided a novel statistical framework to differentiate between true polygenic signals and confounding factors, such as population stratification. By offering a way to distinguish these elements, the work likely resolved ambiguities in interpreting GWAS summary statistics, which was a significant challenge in the field at the time.

The significance of this contribution is evidenced by its substantial citation count of 6,220, indicating widespread adoption and influence. Furthermore, analysis of citing papers reveals that 94.1% of citations come from independent researchers, rather than the scholar’s own collaborators or institution. This high degree of independent uptake underscores the method’s utility and acceptance across the broader scientific community as a standard analytical tool.

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

CORE PAPER

[LD Score regression distinguishes confounding from polygenicity in genome-wide association studies](#)

2015 · 6,220 citations (GS)

Field-normalised: 4,971 Semantic Scholar citations place it in the top 1% of Biology papers from 2015 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Benefits and limitations of genome-wide association studies (2019)	Institut Universitaire de Cardiologie et de Pneumologie de Québec-Université Laval, Laval University, McMaster University	Canada	—
2	Large-scale plasma proteomics comparisons through genetics and disease associations (2023)	deCODE Genetics, deCODE Genetics/Amgen, deCODE genetics, Amgen, University of Iceland	Iceland	—
3	Genetic drivers of heterogeneity in type 2 diabetes pathophysiology (2024)	Broad Institute / Harvard Medical School, Broad Institute of MIT and Harvard, Helmholtz Munich	Germany, Japan, United Kingdom	—
4	Polygenic prediction of educational attainment within and between families from genome-wide association analyses in 3 million individuals (2022)	23andMe, Inc., Geisinger Health System, George Mason University	Australia, Netherlands, Sweden	—

No.	Citing paper	Citing institution(s)	Country	S2
5	Systematic differences in discovery of genetic effects on gene expression and complex traits (2023)	Stanford University	United States	—
6	Genome-wide association studies (2021)	KTH Royal Institute of Technology, University of Cape Town, Vrije Universiteit Amsterdam	Netherlands, South Africa, Sweden	—
7	Tutorial: a guide to performing polygenic risk score analyses (2020)	Icahn School of Medicine, Mount Sinai, King's College London, University of Hong Kong	China, United Kingdom, 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.

D. Citing-Institution Prestige & Geography

Top citing institutions

Institution	Country	World ranking	Citing papers
Massachusetts General Hospital	United States	SCImago #100	5
Broad Institute of MIT and Harvard	United States	SCImago #112	4
University of Pennsylvania	United States	SCImago #52 · THE 14 · QS 15	4
23andMe, Inc.	United States	—	3
Vrije Universiteit Amsterdam	Netherlands	SCImago #110 · THE =176 · QS =194	3
Icahn School of Medicine at Mount Sinai	United States	SCImago #295	3
University of Edinburgh	United Kingdom	SCImago #182 · THE 29 · QS 34	2
Harvard University	United States	SCImago #4 · THE =5 · QS 5	2
Stockholm School of Economics	Sweden	SCImago #6436	2
University of Minnesota	United States	SCImago #165 · THE 88 · QS 210	2
University of North Carolina at Chapel Hill	United States	THE 78 · QS =140	2
University of Pittsburgh School of Medicine	United States	—	2
deCODE Genetics	Iceland	—	2
University of Michigan	United States	SCImago #43 · THE 23 · QS 45	2
University of Cambridge	United Kingdom	SCImago #63 · THE =3 · QS 6	2

Geographic distribution of citing authors

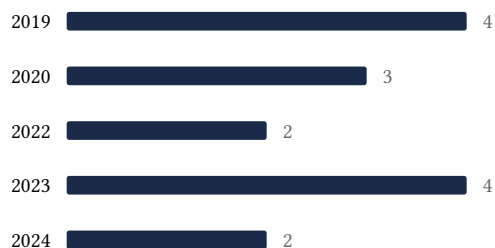
Country	Citing papers
United States	13
United Kingdom	8

Country	Citing papers
Sweden	4
Canada	3
Netherlands	3
Australia	2
Japan	2
China	2
Denmark	2
Germany	2
Iceland	2
South Africa	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	Biological insights from 108 schizophrenia-associated genetic loci	5	8 CFR 204.5(h)(3)(v) – Criterion 5
Contribution 2	LD Score regression distinguishes confounding from polygenicity in genome-wide association studies	7	8 CFR 204.5(h)(3)(v) – Criterion 5