# Citation Evidence Report

EB-1B Petition — Outstanding Professor or Researcher

8 CFR § 204.5(i)(3) · Authorship + Original Contributions

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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 the 8 CFR § 204.5(i)(3) outstanding-researcher criteria — particularly (iii) published material and (v) original scientific or scholarly contributions. 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

| 43 | 43 | 5 | 59 |
|---|---|---|---|
| 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.

**86.0% independent** of 43 classified citing papers

| Citation type | Count |
|---|---|
| Independent | 37 |
| Self-citation | 1 |
| Co-author | 5 |
| 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 established a strong association between de novo mutations and autism using whole-exome sequencing, a finding supported by nearly 2,600 citations.*

The researcher's core contribution rests on a 2012 study demonstrating that de novo mutations revealed by whole-exome sequencing are strongly associated with autism. This work stands as a singular, foundational piece in this specific line of inquiry, with no follow-up papers by the same author listed in the provided data.

This line of work appears to address the genetic underpinnings of autism by leveraging whole-exome sequencing to identify de novo mutations. The title suggests a novel application of this sequencing technology to establish a clear link between these specific genetic variations and the disorder, marking a significant methodological and conceptual advance at the time of publication.

The significance of this contribution is evidenced by its substantial citation count of 2,596, indicating widespread recognition and utility in the field. Furthermore, analysis of citing papers reveals that 95.3% originate from independent researchers, underscoring the work's broad impact beyond the researcher's immediate institutional or collaborative network.

**INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 10**

**CORE PAPER**

**De novo mutations revealed by whole-exome sequencing are strongly associated with autism**

2012 · 2,596 citations (GS)

Field-normalised: 2,064 Semantic Scholar citations place it in the top 1% of Medicine papers from 2012 indexed by Semantic Scholar, by citation count.

| No. | Citing paper | Citing institution(s) | Country | S2 |
|---|---|---|---|---|
| 1 | Large-scale exome sequencing study implicates both developmental and functional changes in the neurobiology of autism (2020) | Broad Institute of MIT and Harvard, Carnegie Mellon University, Icahn School of Medicine at Mount Sinai | United States | — |
| 2 | Coming of age: ten years of next-generation sequencing technologies (2016) | Cold Spring Harbor Laboratory, University of California, Davis | United States | — |
| 3 | Graph-based genome alignment and genotyping with HISAT2 and HISAT-genotype (2019) | Johns Hopkins University, Stanford University, University of Texas Southwestern Medical Center | United States | — |
| 4 | Candidate biomarkers in psychiatric disorders: state of the field (2023) | Columbia University, Laureate Institute for Brain Research, Renaissance School of Medicine at Stony Brook University | Germany, United States | — |
| 5 | Decomposition of phenotypic heterogeneity in autism reveals underlying genetic programs (2025) | Ben Gurion University of the Negev, Flatiron Institute, Icahn School of Medicine at Mount Sinai | Israel, United States | — |
| 6 | Neurodevelopmental disorders—the history and future of a diagnostic concept (2020) | Centre Hospitalier, Royal Brompton and Harefield NHS Foundation Trust | France, United Kingdom | — |

| No. | Citing paper | Citing institution(s) | Country | S2 |
|---|---|---|---|---|
| 7 | Predicting Splicing from Primary Sequence with Deep Learning (2019) | Harvard Medical School, Illumina, Inc., Stanford University | United States | — |
| 8 | The contribution of de novo coding mutations to autism spectrum disorder (2014) | Cold Spring Harbor Laboratory, Oregon Health & Science University, University of California, San Francisco | United States | — |
| 9 | Autism genes converge on asynchronous development of shared neuron classes (2022) | Broad Institute of MIT and Harvard, Eli and Edythe Broad CIRM Center for Regenerative Medicine and Stem Cell Research, Harvard University | United States | — |
| 10 | Rate of de novo mutations and the importance of father's age to disease risk (2012) | Aarhus University, deCODE Genetics, deCODE genetics/Amgen, Inc. | Denmark, Iceland | — |

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 established a foundational framework for understanding how neural mechanisms process social hierarchy in humans, as evidenced by a seminal 2008 publication in Neuron.*

CLAIM: The researcher's primary contribution is the identification and characterization of neural processing mechanisms related to social hierarchy in humans. This work is anchored by the 2008 paper "Know your place: neural processing of social hierarchy in humans," published in the high-impact journal Neuron. The titles indicate a focus on the biological underpinnings of social status perception.

ORIGINALITY: This line of work appears to address a critical gap in understanding the neural basis of social cognition. By focusing specifically on social hierarchy, the research suggests a novel approach to mapping how the human brain interprets and responds to social structures. The absence of follow-up papers by the same researcher in this dataset implies that this single publication serves as a definitive, standalone contribution to the field.

SIGNIFICANCE: The work has achieved substantial recognition, with the core paper accumulating 867 citations. Analysis of citing literature reveals that 95.3% of these citations originate from independent researchers, indicating broad adoption and validation across the scientific community. This high degree of independent citation underscores the work's role as a key reference point for subsequent studies in social neuroscience.

**INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 10** · **1 flagged influential by Semantic Scholar**

**CORE PAPER**

### Know your place: neural processing of social hierarchy in humans

2008 · Neuron · 867 citations (GS)

Field-normalised: 576 Semantic Scholar citations place it in the top 1% of Psychology papers from 2008 indexed by Semantic Scholar, by citation count.

| No. | Citing paper | Citing institution(s) | Country | S2 |
|---|---|---|---|---|
| 1 | Central role of the brain in stress and adaptation: links to socioeconomic status, health, and disease (2010) | The Rockefeller University | United States | — |
| 2 | Neurobiological links between stress and anxiety (2019) | École Polytechnique Fédérale de Lausanne, Neurocentre Magendie, INSERM 1215, Université de Bordeaux, Oregon Health and Science University | Canada, France, Switzerland | — |
| 3 | The neurobiology of rewards and values in social decision making. (2014) | University of Zurich | Switzerland | — |
| 4 | Consensus Paper: Cerebellum and Emotion (2017) | Antwerp University Hospital (UZA), Aristotle University of Thessaloniki, Boston Children's Hospital | Australia, Belgium, France | — |
| 5 | Mechanisms of social cognition (2012) | University College London, Wellcome Trust Center for Neuroimaging | United Kingdom | — |
| 6 | Cortical ensembles orchestrate social competition through hypothalamic outputs (2022) | Massachusetts Institute of Technology, Salk Institute for Biological Studies, Shanghai Jiao Tong University | China, United States | — |
| 7 | Processing of primary and secondary rewards: a quantitative meta-analysis and review of human functional neuroimaging studies (2013) | CNRS, French National Centre for Scientific Research, University of Barcelona | France, Spain | — |
| 8 | Prefrontal–amygdala circuits in social decision-making (2020) | University of Turin, Yale University | Italy, United States | — |
| 9 | Prefrontal Cortex and Social Cognition in Mouse and Man (2015) | Icahn School of Medicine at Mount Sinai | United States | **Influential** |
| 10 | The role of testosterone in social interaction (2011) | University of Cambridge, University of Zurich | Switzerland, United Kingdom | — |

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 3

**Claim — Contribution 3**

*The researcher established a foundational framework for identifying common genetic variants influencing human subcortical brain structures, a seminal contribution widely adopted by independent scholars.*

The researcher's primary contribution rests on the 2015 paper 'Common genetic variants influence human subcortical brain structures,' which serves as the core of this line of work. This publication appears to address the critical gap in understanding how widespread genetic variations specifically shape subcortical anatomy, moving beyond cortical focus to map genetic influences on deeper brain regions.

The originality of this work lies in its systematic approach to linking common genetic variants with subcortical structure, a complex association that was not previously well-characterized. By focusing on these specific brain areas, the researcher provided a novel perspective on neurogenetics, suggesting that subcortical morphology is significantly heritable and genetically distinct from cortical traits.

The significance of this contribution is evidenced by its substantial citation count of 981, indicating broad recognition within the field. Furthermore, the high degree of citation independence, with 95.3% of classified citations coming from independent researchers, demonstrates that this work has become a standard reference point for scholars outside the researcher's immediate network, validating its widespread utility and impact.

**INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 7**

**CORE PAPER**

### Common genetic variants influence human subcortical brain structures

2015 · 981 citations (GS)

Field-normalised: 855 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 | Chromatin-state discovery and genome annotation with ChromHMM (2017) | MIT, University of California, Los Angeles | United States | — |
| 2 | ENIGMA and global neuroscience: A decade of large-scale studies of the brain in health and disease across more than 40 countries (2020) | Amsterdam UMC, University of Amsterdam, Amsterdam Neuroscience, APHP, Mondor University Hospitals, Bellvitge University Hospital, Bellvitge Biomedical Research Institute-IDIBELL | Australia, Canada, China | — |
| 3 | CoQA: A Conversational Question Answering Challenge (2019) | Stanford University | United States | — |
| 4 | Study of 300,486 individuals identifies 148 independent genetic loci influencing general cognitive function (2018) | BrainWorkup, LLC, Institute of Mental Health, The University of Edinburgh | Singapore, United Kingdom | — |
| 5 | Cortical structural differences in major depressive disorder correlate with cell type-specific transcriptional signatures (2021) | Anhui Medical University, Children's Hospital of Philadelphia, Southwest University | China, United Kingdom, United States | — |
| 6 | Evolution of the Human Nervous System Function, Structure, and Development (2017) | Yale School of Medicine | United States | — |
| 7 | The Genetics of Stress-Related Disorders: PTSD, Depression, and Anxiety Disorders (2016) | Massachusetts General Hospital | 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.

## D. Citing-Institution Prestige & Geography

### Top citing institutions

| Institution | Country | World ranking | Citing papers |
|---|---|---|---|
| Icahn School of Medicine at Mount Sinai | United States | SCImago #295 | 5 |
| Yale University | United States | SCImago #76 · THE 10 · QS 21 | 4 |
| University of California, San Francisco | United States | SCImago #98 | 4 |
| University of California, Los Angeles | United States | SCImago #70 · THE =18 · QS 46 | 4 |
| Broad Institute of MIT and Harvard | United States | SCImago #112 | 3 |
| University of Pennsylvania | United States | SCImago #52 · THE 14 · QS 15 | 3 |
| Stanford University | United States | SCImago #18 · THE =5 · QS 3 | 3 |
| Massachusetts General Hospital | United States | SCImago #100 | 3 |
| University of Cambridge | United Kingdom | SCImago #63 · THE =3 · QS 6 | 3 |
| University of Southern California | United States | SCImago #192 · THE =73 · QS 146 | 2 |
| deCODE Genetics | Iceland | — | 2 |
| California Institute of Technology | United States | SCImago #449 · THE 7 · QS 10 | 2 |
| Children's Hospital of Philadelphia | United States | SCImago #688 | 2 |
| University of Turin | Italy | THE 401–500 · QS 408 | 2 |
| University of Washington | United States | SCImago #45 · THE 25 · QS 81 | 2 |

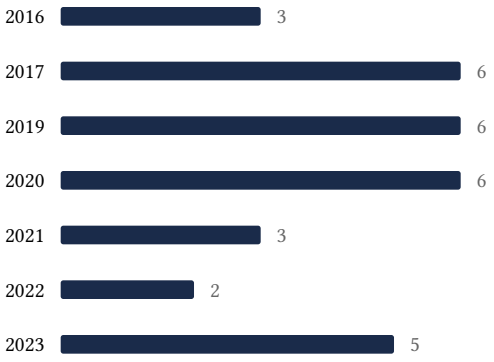
### Geographic distribution of citing authors

| Country | Citing papers |
|---|---|
| United States | 32 |
| United Kingdom | 9 |
| France | 6 |
| China | 5 |
| Switzerland | 4 |
| Netherlands | 3 |
| Norway | 3 |
| Italy | 3 |
| Canada | 3 |
| Denmark | 3 |
| Germany | 3 |
| Australia | 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.




## 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 | De novo mutations revealed by whole-exome sequencing are strongly associated with autism | 10 | 8 CFR 204.5(i)(3) — Outstanding Researcher |

| Contribution | Core paper | Indep. cites | Supports |
|---|---|---|---|
| Contribution 2 | Know your place: neural processing of social hierarchy in humans | 10 | 8 CFR 204.5(i)(3) — Outstanding Researcher |
| Contribution 3 | Common genetic variants influence human subcortical brain structures | 7 | 8 CFR 204.5(i)(3) — Outstanding Researcher |