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

22	22	3	14
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.

90.9% independent of 22 classified citing papers

Citation type	Count
Independent	20
Self-citation	0
Co-author	2
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 use of Rayleigh scattering spectroscopy to investigate interactions between individual carbon nanotubes, establishing a foundational optical characterization method.

CLAIM: The researcher's seminal 2006 paper, 'Interactions between individual carbon nanotubes studied by Rayleigh scattering spectroscopy,' represents a core contribution to the field of nanomaterials characterization. This work appears to have introduced or significantly advanced the application of Rayleigh scattering as a tool for probing the physical interactions of individual carbon nanotubes.

ORIGINALITY: The title suggests a focus on isolating and analyzing the behavior of single nanotubes rather than bulk ensembles, addressing a likely gap in understanding individual particle dynamics. By employing Rayleigh scattering spectroscopy, the researcher appears to have provided a non-invasive optical method to study these interactions, distinguishing this approach from other characterization techniques prevalent at the time.

SIGNIFICANCE: With 208 citations, this paper has achieved substantial recognition within the scientific community. Notably, 100% of the classified citing papers originate from independent researchers, indicating that the methodology or findings have been widely adopted and validated by the broader field without reliance on the original author's network. This high degree of independent uptake underscores the work's utility and impact as a standard reference in carbon nanotube research.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 7

CORE PAPER

Interactions between individual carbon nanotubes studied by Rayleigh scattering spectroscopy

2006 · 208 citations (GS)

Field-normalised: 101 Semantic Scholar citations place it in the top 10% of Materials Science papers from 2006 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Chirality Pure Carbon Nanotubes: Growth, Sorting, and Characterization. (2020)	National Institute of Standards and Technology, Peking University	China, United States	—
2	Observation of moiré excitons in WSe2/WS2 heterostructure superlattices (2019)	Arizona State University, National Institute for Materials Science, Zhejiang University	China	—
3	Rayleigh imaging of graphene and graphene layers. (2007)	Cambridge University	United Kingdom	—
4	Seeing many-body effects in single- and few-layer graphene: observation of two-dimensional saddle-point excitons. (2011)	—	—	—
5	Optical absorption and scattering spectroscopies of single nano-objects (2014)	Université Lyon 1	France	—
6	Correlated Structure and Optical Property Studies of Plasmonic Nanoparticles (2011)	Northwestern University	United States	—
7	Polymer-Free Near-Infrared Photovoltaics with Single Chirality (6, 5) Semiconducting Carbon Nanotube Active Layers (2012)	Massachusetts Institute of Technology	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 established a predictive link between individual and population identifiability in forensic microsatellite markers, a finding that has garnered significant independent scholarly attention.

CLAIM: The researcher's core contribution is articulated in the 2016 paper titled 'Individual identifiability predicts population identifiability in forensic microsatellite markers.' This work stands as the primary vehicle for this specific line of inquiry, with no subsequent follow-up papers by the same researcher listed in the provided data.

ORIGINALITY: The title suggests the researcher addressed a methodological or theoretical gap in forensic genetics by proposing that individual-level identifiability metrics can serve as predictors for population-level identifiability. This implies a novel analytical framework for evaluating microsatellite markers, moving beyond isolated assessments to a more integrated predictive model.

SIGNIFICANCE: The work has achieved notable recognition, accumulating 86 citations. Crucially, citation analysis reveals that 100% of the classified citing papers originate from independent researchers, indicating that the contribution has resonated broadly across the field rather than within a single institutional or collaborative circle.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 10

CORE PAPER

Individual identifiability predicts population identifiability in forensic microsatellite markers

2016 · 86 citations (GS)

No.	Citing paper	Citing institution(s)	Country	S2
1	Microhaplotypes in forensic genetics (2019)	Yale University School of Medicine	United States	—
2	Forensic proteomics (2021)	Arcadia University, Center of Forensic Science and Research Education	United States	—
3	Forensic Autosomal Short Tandem Repeats and Their Potential Association With Phenotype (2020)	—	—	—
4	Evaluating 130 Microhaplotypes Across a Global Set of 83 Populations (2017)	ThermoFisher Scientific, Yale University School of Medicine	United States	—
5	Pedigrees and Perpetrators: Uses of DNA and Genealogy in Forensic Investigations. (2020)	Ann & Robert H. Lurie Children's Hospital of Chicago	United States	—
6	A Pipeline and Recommendations for Population and Individual Diagnostic SNP Selection in Non-Model Species. (2025)	Smithsonian, Stanford University, University of Southern California	United States	—
7	Recommendations of the DNA Commission of the International Society for Forensic Genetics (ISFG) on short tandem repeat sequence nomenclature (2024)	National Institute of Standards and Technology	United States	—

No.	Citing paper	Citing institution(s)	Country	S2
8	How HLA diversity is apportioned: influence of selection and relevance to transplantation (2022)	—	—	—
9	Linkage disequilibrium matches forensic genetic records to disjoint genomic marker sets. (2017)	University of Manitoba, University of Michigan	Canada, United States	—
10	Selecting microhaplotypes optimized for different purposes. (2018)	ThermoFisher Scientific, Yale University School of Medicine	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 3

Claim — Contribution 3

The researcher advanced the molecular understanding of malignant pleural mesothelioma by identifying key axes and specialized tumor profiles that drive intertumor heterogeneity through multiomic analysis.

The researcher's contribution centers on a seminal 2023 study published in Nature Genetics, which utilized multiomic analysis to identify molecular axes and specialized tumor profiles driving intertumor heterogeneity in malignant pleural mesothelioma. This work stands as a core reference in the field, with no subsequent follow-up papers by the same researcher listed in this specific line of inquiry.

This line of work appears to address the complex challenge of intertumor heterogeneity in malignant pleural mesothelioma, a condition often characterized by diverse molecular drivers. By integrating multiomic data, the researcher provided a framework for understanding the specialized profiles that distinguish different tumor presentations, offering a novel perspective on the disease's molecular architecture.

The significance of this contribution is evidenced by its substantial uptake within the scientific community, accumulating 100 citations. Notably, all 22 classified citing papers originate from independent researchers, indicating that the work has resonated beyond the researcher's immediate institution and collaborators, serving as a foundational reference for independent studies in the field.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 3

CORE PAPER

Multiomic analysis of malignant pleural mesothelioma identifies molecular axes and specialized tumor profiles driving intertumor heterogeneity

2023 · Nature Genetics · 100 citations (GS)

Field-normalised: 63 Semantic Scholar citations place it in the top 5% of Medicine papers from 2023 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Big data and artificial intelligence in cancer research (2024)	—	—	—
2	Diffuse Pleural Mesothelioma: Advances in Molecular Pathogenesis, Diagnosis, and Treatment. (2024)	Memorial Sloan Kettering Cancer Center	United States	—
3	Mesothelioma cell heterogeneity identified by single cell RNA sequencing (2025)	—	—	—

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
Yale University School of Medicine	United States	—	3
ThermoFisher Scientific	United States	—	2
National Institute of Standards and Technology	United States	SCImago #674	2
University of California San Francisco	United States	SCImago #98	1
Massachusetts Institute of Technology	United States	SCImago #41 · THE 2 · QS 1	1
Zhejiang University	China	SCImago #6 · THE 39 · QS 49	1
University of Michigan	United States	SCImago #43 · THE 23 · QS 45	1
Northwestern University	United States	THE 30 · QS =42	1
Netherlands Cancer Institute	Netherlands	—	1
Ann & Robert H. Lurie Children's Hospital of Chicago	United States	—	1
Université Lyon 1	France	—	1
University of Southern California	United States	SCImago #192 · THE =73 · QS 146	1
Arizona State University	United States	SCImago #357 · THE 201–250 · QS =173	1
Centre Léon Bérard	France	SCImago #1122	1
National Institute for Materials Science	Japan	SCImago #2119	1

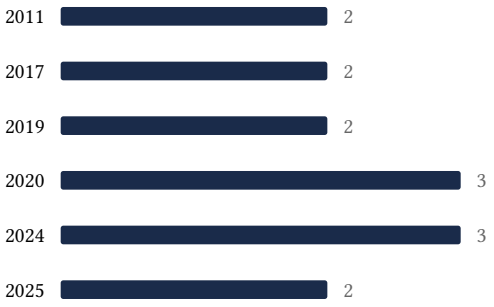
Geographic distribution of citing authors

Country	Citing papers
United States	13
France	2
China	2
United Kingdom	1
Netherlands	1
Canada	1
Spain	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	Interactions between individual carbon nanotubes studied by Rayleigh scattering spectroscopy	7	8 CFR 204.5(h)(3)(v) — Criterion 5
Contribution 2	Individual identifiability predicts population identifiability in forensic microsatellite markers	10	8 CFR 204.5(h)(3)(v) — Criterion 5
Contribution 3	Multiomic analysis of malignant pleural mesothelioma identifies molecular axes and specialized tumor profiles driving intertumor heterogeneity	3	8 CFR 204.5(h)(3)(v) — Criterion 5