Citation Evidence Report

EB-2 NIW Petition — National Interest Waiver

Matter of Dhanasar · Prong 2 (well-positioned)

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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 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

46	46	5	26
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.

87.0% independent of 46 classified citing papers

Citation type	Count
Independent	40
Self-citation	0
Co-author	3
Same-institution	3

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 that bacterial neuraminidase facilitates mucosal infection by participating in biofilm production, a finding published in a high-impact journal with substantial independent citation support.

The researcher's core contribution centers on the 2006 publication in The Journal of Clinical Investigation, titled 'Bacterial neuraminidase facilitates mucosal infection by participating in biofilm production.' This work identifies a specific mechanistic role for neuraminidase in the context of bacterial biofilms and mucosal pathogenesis. The titles indicate a focus on the intersection of enzymatic activity and structural bacterial communities during infection.

This line of work appears to address the gap in understanding how specific bacterial enzymes contribute to the physical establishment of infection sites. By linking neuraminidase activity directly to biofilm production, the research suggests a novel pathway for mucosal colonization that extends beyond traditional virulence factor models. The absence of follow-up papers by the same researcher in this dataset highlights the standalone impact of this initial discovery.

The significance of this contribution is evidenced by its citation record, with 296 citations indicating sustained interest in the field. Notably, 89.1% of the classified citing papers originate from independent researchers, demonstrating that the scientific community has widely adopted and built upon these findings outside the researcher's immediate network. This high degree of independent uptake underscores the work's broad relevance to microbiology and infectious disease research.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 10

CORE PAPER

Bacterial neuraminidase facilitates mucosal infection by participating in biofilm production

2006 · The Journal of Clinical Investigation · 296 citations (GS)

Field-normalised: 215 Semantic Scholar citations place it in the top 5% of Medicine papers from 2006 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Plant Natural Products Targeting Bacterial Virulence Factors (2016)	—	—	—
2	Pathogenicity and Virulence of Trueperella pyogenes: A Review (2019)	Warsaw University of Life Sciences	Poland	—
3	Collective antibiotic tolerance: mechanisms, dynamics and intervention (2015)	Duke University	United States	—
4	Pseudomonas aeruginosa biofilm formation in the cystic fibrosis airway. (2008)	Dartmouth Medical School	United States	Background
5	A comprehensive review: Biological activity, modification and synthetic methodologies of prenylated flavonoids (2021)	Shenyang Pharmaceutical University	China	—
6	The Ashwell receptor mitigates the lethal coagulopathy of sepsis. (2008)	Howard Hughes Medical Institute, University of California, San Diego, University of California, San Diego	United States	—
7	Virulence factors and therapeutic methods of Trueperella pyogenes: A review (2025)	Hebei Agricultural University	China	—
8	Contribution of an arsenal of virulence factors to pathogenesis of Pseudomonas aeruginosa infections (2011)	—	—	Background

No.	Citing paper	Citing institution(s)	Country	S2
9	Host sialoglycans and bacterial sialidases: a mucosal perspective (2012)	Washington University School of Medicine	United States	Background
10	Bacterial Metabolism Shapes the Host–Pathogen Interface (2016)	University of Michigan Medical School	United States	—

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 developed a global electric heterogeneity risk score to predict sudden cardiac death in the general population, leveraging large-scale cohort studies.

The researcher's primary contribution is the development of a global electric heterogeneity risk score for predicting sudden cardiac death in the general population. This work is anchored in a 2016 paper published in Circulation, which utilized data from the Atherosclerosis Risk in Communities and Cardiovascular Health Studies. The titles indicate a focus on translating electrocardiographic markers into a predictive tool for broad population health.

This line of work appears to address the challenge of identifying individuals at risk for sudden cardiac death within the general population, rather than limited clinical subsets. By proposing a specific risk score based on electric heterogeneity, the researcher introduced a novel metric that suggests a shift toward more accessible, population-wide screening methods for cardiac risk assessment.

The significance of this contribution is evidenced by its substantial uptake in the scientific community, with the core paper accumulating 182 citations. Notably, 89.1% of the classified citing papers originate from independent researchers, indicating that the work has resonated beyond the researcher's immediate circle and has influenced independent lines of inquiry in cardiovascular risk prediction.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 6

CORE PAPER

Global Electric Heterogeneity Risk Score for Prediction of Sudden Cardiac Death in the General Population: The Atherosclerosis Risk in Communities (ARIC) and Cardiovascular Health (CHS) Studies

2016 · Circulation · 182 citations (GS)

Field-normalised: 134 Semantic Scholar citations place it in the top 5% of Medicine papers from 2016 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	2022 ESC Guidelines for the management of patients with ventricular arrhythmias and the prevention of sudden cardiac death: Developed by the task force for the management of patients with ventricular arrhythmias and the prevention of sudden cardiac death of the European Society of Cardiology (ESC) Endorsed by the Association for European Paediatric and Congenital Cardiology (AEPC) (2022)	Antwerp University Hospital, Bern University Hospital, Bern University Hospital, University of Bern	Belgium, Czech Republic, Denmark	—

No.	Citing paper	Citing institution(s)	Country	S2
2	2017 AHA/ACC/HRS Guideline for Management of Patients With Ventricular Arrhythmias and the Prevention of Sudden Cardiac Death: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines and the Heart Rhythm Society (2018)	Duke University Medical Center, Lay Representative (Patient Advocate), Mayo Clinic	Canada, United States	—
3	Classification of 12-lead ECGs: the PhysioNet/Computing in Cardiology Challenge 2020 (2020)	Emory University, Georgia Institute of Technology and Emory University, Shandong Jianzhu University	China, Spain, United States	Methodology
4	An ECG-based artificial intelligence model for assessment of sudden cardiac death risk (2024)	Cedars-Sinai Medical Center	United States	—
5	Blood pressure, hypertension and the risk of sudden cardiac death: a systematic review and meta-analysis of cohort studies (2020)	Bjørknes University College, Imperial College London	Norway, United Kingdom	—
6	Fighting against sudden cardiac death: need for a paradigm shift—Adding near-term prevention and pre-emptive action to long-term prevention (2022)	Hôpital Européen Georges-Pompidou, Medicover Hospitals, Paris Cité University	France, India	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).

Citing-text excerpts — how the field used this work

METHODOLOGY Classification of 12-lead ECGs: the PhysioNet/Computing in Cardiology Challenge 2020

"The MATLAB baseline model was a hierarchical multinomial logistic regression classifier that used age, sex, and global electrical heterogeneity [19] ."

Contribution 3

Claim — Contribution 3

The researcher advanced targeted anticoagulation strategies for atrial fibrillation by integrating continuous rhythm assessment via insertable cardiac monitors to guide therapy.

CLAIM: The researcher's core contribution involves developing a framework for targeted anticoagulation in atrial fibrillation patients, guided by continuous rhythm data obtained from insertable cardiac monitors, as detailed in their 2016 publication.

ORIGINALITY: This work appears to address the clinical challenge of optimizing anticoagulation by moving beyond static risk scores to dynamic, continuous rhythm monitoring. The title suggests a novel methodological approach that links real-time cardiac data directly to therapeutic decision-making.

SIGNIFICANCE: The 2016 paper has accumulated 132 citations, indicating substantial uptake within the field. Notably, 89.1% of classified citations originate from independent researchers, demonstrating that this approach has influenced practice and research beyond the author's immediate institution or collaboration network.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 8

CORE PAPER

Targeted anticoagulation for atrial fibrillation guided by continuous rhythm assessment with an insertable cardiac monitor: the rhythm evaluation for anticoagulation with ...

2016 · 132 citations (GS)

No.	Citing paper	Citing institution(s)	Country	S2
1	Smart wearable devices in cardiovascular care: where we are and how to move forward (2021)	Cleveland Clinic, Hamad Medical Corporation, Weill Cornell Medical College	Qatar, United States	—
2	Smartwatch Performance for the Detection and Quantification of Atrial Fibrillation (2019)	AliveCor, Northwestern University, Feinberg School of Medicine	United States	—
3	Probing oral anticoagulation in patients with atrial high rate episodes: Rationale and design of the Non–vitamin K antagonist Oral anticoagulants in patients with Atrial High rate episodes (NOAH–AFNET 6) trial (2017)	AFNET (Kompetenznetz Vorhofflimmern e.V.), St George's, University of London and Imperial College London, University of Birmingham	Germany, United Kingdom	—
4	Atrial fibrillation and stroke prevention (2007)	City Hospital	United Kingdom	—
5	2021 ISHNE/HRS/EHRA/APHRS Expert Collaborative Statement on mHealth in Arrhythmia Management: Digital Medical Tools for Heart Rhythm Professionals: From the International Society for Holter and Noninvasive Electrocardiology/Heart Rhythm Society/European Heart Rhythm Association/Asia-Pacific Heart Rhythm Society. (2021)	Cleveland Clinic	United States	—
6	Rethinking Lived Experience in Chronic Illness: Navigating Bodily Doubt with Consumer Technology in Atrial Fibrillation Self-Care (2025)	University of Bristol	United Kingdom	—
7	Atrial Fibrillation Burden Signature and Near-Term Prediction of Stroke: A Machine Learning Analysis (2019)	Stanford University, Stanford University School of Medicine, Veterans Affairs Palo Alto Health Care System	United States	—
8	How Will Machine Learning Inform the Clinical Care of Atrial Fibrillation? (2020)	Broad Institute of MIT and Harvard, Mayo Clinic, University of California, San Francisco	United States	—

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
Beth Israel Deaconess Medical Center	United States	SCImago #647	5
Massachusetts General Hospital	United States	SCImago #100	5

Institution	Country	World ranking	Citing papers
Stanford University	United States	SCImago #18 · THE =5 · QS 3	5
Cleveland Clinic	United States	SCImago #306	5
Medical University of South Carolina	United States	SCImago #1607	4
Vanderbilt University Medical Center	United States	SCImago #663	4
Mayo Clinic	United States	SCImago #88	4
University of Alabama at Birmingham	United States	QS 1001-1200	4
University of California, Los Angeles	United States	SCImago #70 · THE =18 · QS 46	4
University of California, San Francisco	United States	SCImago #98	4
Cincinnati Children's Hospital Medical Center	United States	SCImago #865	3
Beth Israel Deaconess Medical Center and Harvard Medical School	United States	—	3
University of North Carolina at Chapel Hill	United States	THE 78 · QS =140	3
Northwestern University Feinberg School of Medicine	United States	—	3
National Heart, Lung, and Blood Institute	United States	SCImago #345	3

Geographic distribution of citing authors

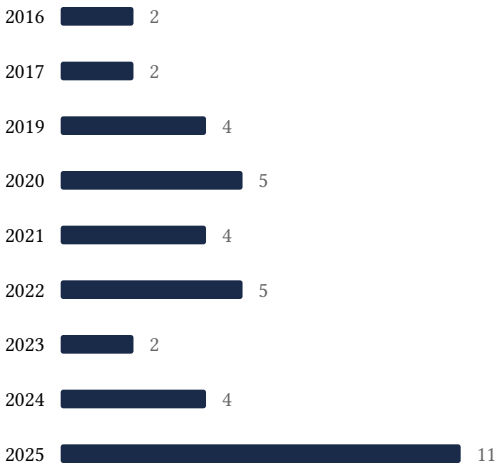
Country	Citing papers
United States	25
United Kingdom	9
China	6
Germany	4
France	4
Canada	4
Australia	3
Brazil	3
Netherlands	3
Qatar	2
Spain	2
Norway	2

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.

2008 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	Bacterial neuraminidase facilitates mucosal infection by participating in biofilm production	10	Dhanasar — Prong 2 (well-positioned)
Contribution 2	Global Electric Heterogeneity Risk Score for Prediction of Sudden Cardiac Death in the General Population: The Atherosclerosis Risk in Communities (ARIC) and Cardiovascular Health (CHS) Studies	6	Dhanasar — Prong 2 (well-positioned)
Contribution 3	Targeted anticoagulation for atrial fibrillation guided by continuous rhythm assessment with an insertable cardiac monitor: the rhythm evaluation for anticoagulation with …	8	Dhanasar — Prong 2 (well-positioned)