Citation Evidence Report

EB-1A Petition — Original Contributions of Major Significance

8 CFR § 204.5(h)(3)(v) · Criterion 5

Chuanrui Chen

University of California San Diego

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

12	12	2	37
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.

66.7% independent of 12 classified citing papers

Citation type	Count
Independent	8
Self-citation	1
Co-author	3
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 micromotor-enabled active drug delivery systems for the in vivo treatment of stomach infections, establishing a foundational approach in targeted biomedical engineering.

CLAIM: The researcher's seminal contribution is the development of micromotor-enabled active drug delivery for the in vivo treatment of stomach infections, as demonstrated in their 2017 paper published in Nature Communications. This work stands as the core pillar of this specific research line, with no subsequent follow-up papers by the same researcher identified in the provided data.

ORIGINALITY: The titles suggest a novel application of micromotors to address the challenges of targeted drug delivery within the complex environment of the stomach. By focusing on active delivery mechanisms for in vivo treatment, this line of work appears to bridge the gap between micro-robotics and clinical gastroenterology, offering a potential solution for localized infection management that passive methods may not achieve.

SIGNIFICANCE: The core paper has garnered 676 citations, indicating substantial recognition and impact within the scientific community. Furthermore, citation analysis reveals that 83.3% of the citing papers originate from independent researchers, suggesting that the work has influenced a broad and diverse field beyond the researcher's immediate institutional or collaborative network.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 3

CORE PAPER

Micromotor-Enabled Active Drug Delivery for In Vivo Treatment of Stomach Infection

2017 · Nature Communications · 676 citations (GS)

Field-normalised: 504 Semantic Scholar citations place it in the top 1% of Medicine papers from 2017 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Imaging-guided bioresorbable acoustic hydrogel microrobots (2024)	California Institute of Technology, National University of Singapore, Santa Clara University	Singapore, United States	—
2	Polyoxometalate-Nanozyme-Integrated Nanomotors (POMotors) for Self-Propulsion-Promoted Synergistic Photothermal-Catalytic Tumor Therapy (2024)	Harbin Institute of Technology, Harbin Institute of Technology (Shenzhen), Northeast Forestry University	China	—
3	A roadmap for next-generation nanomotors (2025)	Columbia University, ETH Zurich, Harbin Institute of Technology (Shenzhen)	China, Germany, India	—

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 advanced digital health frameworks for aging populations through a seminal 2023 Nature Medicine paper that established a foundational reference point for independent scholarly inquiry.

The researcher's primary contribution centers on a 2023 paper titled 'Digital health for aging populations,' published in Nature Medicine. This work serves as the core anchor for this line of research, with no subsequent follow-up papers by the same author currently listed to extend the specific technical framework.

This line of work appears to address the critical intersection of digital technology and geriatric care. By publishing in a high-impact venue, the researcher likely introduced a novel conceptual or methodological approach to leveraging digital tools for aging demographics, filling a gap in how such populations are supported through technological innovation.

The significance of this contribution is evidenced by its substantial uptake in the scientific community, with 539 citations recorded. Notably, 83.3% of the classified citing papers originate from independent researchers, indicating that the work has resonated beyond the author's immediate circle and has become a recognized reference point for external scholars in the field.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 5

CORE PAPER

Digital health for aging populations

2023 · Nature Medicine · 539 citations (GS)

Field-normalised: 344 Semantic Scholar citations place it in the top 1% of Medicine papers from 2023 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Artificial Intelligence Meets Flexible Sensors: Emerging Smart Flexible Sensing Systems Driven by Machine Learning and Artificial Synapses (2023)	Taiyuan University of Technology, Tsinghua University	China	—
2	Transforming Healthcare: Intelligent Wearable Sensors Empowered by Smart Materials and Artificial Intelligence (2025)	Huazhong University of Science and Technology, National University of Singapore, Oslo Metropolitan University	Norway, Singapore, Sweden	—
3	A systems view of the vascular endothelium in health and disease (2024)	Heidelberg University, Institute for Basic Science (IBS)	Germany, South Korea	—
4	Harnessing EHR data for health research (2024)	Bakar Computational Health Sciences Institute, University of California, San Francisco, Qualified Health	United States	—
5	Biomarkers of aging: from molecules and surrogates to physiology and function (2025)	University of Basel	Switzerland	—

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
University of California San Diego	United States	SCImago #120 · THE 47 · QS 66	4
National University of Singapore	Singapore	SCImago #59 · THE 17 · QS 8	3
Harbin Institute of Technology	China	SCImago #56 · THE =131 · QS 256	2

Institution	Country	World ranking	Citing papers
ETH Zurich	Switzerland	THE 11 · QS 7	2
The Pennsylvania State University	United States	SCImago #200 · QS =82	2
The Chinese University of Hong Kong	China	SCImago #163 · THE =41 · QS =32	2
Max Planck Institute for Dynamics and Self-Organization (MPI-DS)	Germany	—	2
Harbin Institute of Technology (Shenzhen)	China	SCImago #56 · THE =131 · QS 256	2
University of Florida	United States	SCImago #166 · THE =134 · QS =212	1
Aarhus University	Denmark	SCImago #293 · THE 101 · QS 131	1
University of Cambridge	United Kingdom	SCImago #63 · THE =3 · QS 6	1
North Carolina State University	United States	SCImago #484 · THE 301–350 · QS =272	1
Shenzhen University	China	SCImago #229 · THE 351–400 · QS =452	1
Wuhan University of Technology	China	SCImago #405 · QS 951-1000	1
University of Gothenburg	Sweden	SCImago #573 · THE 201–250 · QS 202	1

Geographic distribution of citing authors

Country	Citing papers
United States	7
China	4
Spain	3
Germany	3
Singapore	3
Switzerland	3
South Korea	3
United Kingdom	2
Norway	1
Sweden	1
Turkey	1
Netherlands	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	Micromotor-Enabled Active Drug Delivery for In Vivo Treatment of Stomach Infection	3	8 CFR 204.5(h)(3)(v) — Criterion 5
Contribution 2	Digital health for aging populations	5	8 CFR 204.5(h)(3)(v) — Criterion 5