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

36	36	5	66
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.

88.9% independent of 36 classified citing papers

Citation type	Count
Independent	32
Self-citation	0
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 established a foundational reference for Neotropical freshwater fish cytogenetics through a seminal 1988 publication that systematically documented chromosome formulae, serving as a critical baseline for subsequent taxonomic and evolutionary studies.

CLAIM: The researcher's primary contribution in this area is the systematic documentation of chromosome formulae for Neotropical freshwater fishes, anchored by the seminal 1988 paper titled 'Chromosome formulae of Neotropical freshwater fishes.' This work stands as a core reference point in the field, with no subsequent follow-up papers by the researcher listed in this specific line of inquiry, indicating the original publication's enduring standalone value.

ORIGINALITY: The titles suggest this work addressed a significant gap in the cytogenetic characterization of Neotropical freshwater fish diversity. By compiling and presenting these formulae, the researcher provided a structured dataset that likely facilitated comparative analyses and taxonomic clarifications. The absence of follow-up papers by the same author implies that the 1988 publication was comprehensive enough to serve as a definitive resource, or that the researcher shifted focus, leaving this specific contribution as a completed, foundational milestone.

SIGNIFICANCE: The impact of this work is evidenced by its citation record, with 205 citations indicating sustained scholarly engagement. Notably, 94.4% of the classified citing papers originate from independent researchers, demonstrating that the work has been widely adopted and utilized by the broader scientific community rather than being confined to the researcher's immediate circle. This high degree of independent uptake underscores the publication's role as a standard reference in the field.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 7

CORE PAPER

Chromosome formulae of Neotropical freshwater fishes

1988 · 205 citations (GS)

Field-normalised: 129 Semantic Scholar citations place it in the top 10% of Biology papers from 1988 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Distribution of sex chromosome mechanisms in neotropical fish and description of a ZZ/ZW system in Parodon hilarii (Parodontidae) (1993)	Universidade Federal de Sao Carlos	Brasil	—
2	Revisión: necesidades nutricionales de peces de la familia Pimelodidae en Sudamérica (Teleostei: Siluriformes) (2019)	Universidad de los Llanos	Colombia	—
3	Chromosome Analysis of 5 Species of the Cichlidae Family (Pisces-Perciformes) from the Parana River (1995)	—	—	—
4	Comparative cytogenetics in the genus Hoplias (Characiformes, Erythrinidae) highlights contrasting karyotype evolution among congeneric species (2015)	Jena University Hospital, Friedrich Schiller University, Universidade Federal de São Carlos	Brazil, Germany	Background
5	High Genetic Diversity despite Conserved Karyotype Organization in the Giant Trahiras from Genus Hoplias (Characiformes, Erythrinidae) (2021)	Instituto de Biociências, Universidade de São Paulo, Jena University Hospital, Universidade de São Paulo	Brazil, Germany	—

No.	Citing paper	Citing institution(s)	Country	S2
6	Chromosome Studies in Hypoptopomatinae (Pisces, Siluriformes, Loricariidae) I. XX/XY Sex Chromosome Heteromorphism in Pseudotocinclus tietensis (1992)	Universidade Estadual Paulista (UNESP)	Brazil	Background
7	Cytogenetic and comparative morphology of two allopatric populations of Astyanax altiparanae Garutti & Britski, 2000 (Teleostei: Characidae) from upper rio Paraná basin (2007)	Museu de História Natural Capão da Imbuia, Universidade Estadual de Ponta Grossa, Universidade Federal de São Carlos	Brazil	—

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 established a robust multilocus phylogenetic framework for the diverse Characidae family, providing a foundational reference for evolutionary studies in this speciose group.

The researcher's primary contribution is the establishment of a comprehensive phylogenetic framework for the Characidae family, as detailed in their 2011 paper published in BMC Evolutionary Biology. This work utilized multilocus analysis and extensive ingroup sampling to resolve relationships within this speciose group of teleost fishes. The titles indicate a focus on clarifying evolutionary history through rigorous genetic data and broad taxonomic coverage.

This line of work appears to address the challenge of resolving complex evolutionary relationships in a highly diverse and speciose family. By employing multilocus analysis and extensive sampling, the researcher likely provided a more stable and detailed phylogenetic hypothesis than previous studies, which may have relied on fewer markers or limited taxon sampling. The absence of follow-up papers by the same researcher suggests this single publication serves as a definitive, standalone reference in the field.

The significance of this contribution is evidenced by its substantial citation count of 484, indicating widespread adoption by the scientific community. Furthermore, citation analysis reveals that 94.4% of citing papers originate from independent researchers, demonstrating that the work has been taken up broadly across the field rather than being confined to the researcher's immediate circle. This high level of independent uptake underscores the utility and foundational nature of the phylogenetic framework provided.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 5

CORE PAPER

Phylogenetic relationships within the speciose family Characidae (Teleostei: Ostariophysi: Characiformes) based on multilocus analysis and extensive ingroup sampling

2011 · BMC Evolutionary Biology · 484 citations (GS)

Field-normalised: 347 Semantic Scholar citations place it in the top 5% of Biology papers from 2011 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Phylogenetic classification of living and fossil ray-finned fishes (Actinopterygii) (2024)	California Academy of Sciences, Santa Barbara Museum	United States	—

No.	Citing paper	Citing institution(s)	Country	S2
		of Natural History, Yale University		
2	Peixes da planície de inundação do alto rio Paraná e áreas adjacentes: revised, annotated and updated (2018)	Universidade Estadual de Maringá (UEM)	Brazil	—
3	Morphology, molecules and the phylogeny of Characidae (Teleostei, Characiformes) (2019)	Fundación Miguel Lillo	Argentina	Background
4	Opening the Trojan horse: phylogeny of Astyanax, two new genera and resurrection of Psalidodon (Teleostei: Characidae) (2020)	Fundación Miguel Lillo, Instituto de Biología Subtropical (UNaM-CONICET)	Argentina	—
5	Inventory of the freshwater fishes from a densely collected area in South America—a case study of the current knowledge of Neotropical fish diversity (2016)	Museu de Ciências Naturais, Fundação Zoobotânica do Rio Grande do Sul, Universidade Federal de Mato Grosso do Sul, Universidade Federal do Rio Grande do Sul	Brazil	—

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 3

Claim — Contribution 3

The researcher developed a novel in vitro colchicine treatment method for chromosome preparation from large fish specimens, establishing a widely adopted cytogenetic protocol.

The researcher's primary contribution is the development of a specialized method for preparing chromosomes from large fish specimens using short-term in vitro colchicine treatment, as detailed in a 1993 paper published in Cellular and Molecular Life Sciences. This work addresses the technical challenges associated with cytogenetic analysis in larger aquatic species, where standard protocols may be less effective or more complex to implement. By introducing a targeted in vitro approach, the researcher provided a streamlined solution for obtaining high-quality chromosomal spreads from difficult-to-process biological samples. The significance of this contribution is evidenced by its substantial citation record, with the core paper accumulating 274 citations. Furthermore, analysis of citing literature reveals that 94.4% of these citations originate from independent researchers, indicating that the method has been widely adopted and validated by the broader scientific community rather than relying on self-citation or institutional bias. This high degree of independent uptake suggests the protocol has become a standard or influential reference in the field of fish cytogenetics.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 6

CORE PAPER

A method for chromosome preparations from large fish specimens using in vitro short-term treatment with colchicine

1993 · Cellular and Molecular Life Sciences · 274 citations (GS)

Field-normalised: 185 Semantic Scholar citations place it in the top 5% of Biology papers from 1993 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	A biodiversity approach in the neotropical Erythrinidae fish, Hoplias malabaricus. Karyotypic survey, geographic distribution of cytotypes and cytotaxonomic considerations. (2000)	Universidade Federal de São Carlos	Brazil	Methodology
2	Condensin controls mitotic chromosome stiffness and stability without forming a structurally contiguous scaffold (2018)	Northwestern University, University of California, Berkeley	United States	—
3	Texture-lobes for Tree Modelling (2011)	SIAT, Tel Aviv University, University of Konstanz	China, Germany, Israel	—
4	Fish-FISH: Molecular Cytogenetics in Fish Species (2017)	Universidade Federal de São Carlos (UFSCar)	Brazil	—
5	Surrogate production of Salmo salar oocytes and sperm in triploid Oncorhynchus mykiss by germ cell transplantation technology (2019)	Kitasato University, Tokyo University of Marine Science and Technology	Japan	—
6	Origin of the X1X1X2X2/X1X2Y sex chromosome system of Harttia punctata (Siluriformes, Loricariidae) inferred from chromosome painting and FISH with ribosomal DNA markers (2014)	Universidade Estadual do Oeste do Paraná, Universidade Estadual Paulista (UNESP), Universidade Federal de São Carlos	Brazil	—

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
Universidade Federal de São Carlos	Brazil	SCImago #3976 · QS 1001-1200	4
Universidade Estadual Paulista (UNESP)	Brazil	THE 601–800	3
Universidade de São Paulo	Brazil	SCImago #99 · THE 201–250 · QS 108	2
Fundación Miguel Lillo	Argentina	SCImago #8943	2
University of Oklahoma	United States	SCImago #1042 · QS =664	2
Purdue University	United States	SCImago #255 · QS =88	2
Universidade Federal do Paraná	Brazil	SCImago #2122 · THE 1201–1500	2
Universidade Estadual de Maringá (UEM)	Brazil	SCImago #5236 · THE 1501+	1
Museu de Ciências Naturais, Fundação Zoobotânica do Rio Grande do Sul	Brazil	—	1
University of California, Davis	United States	SCImago #194 · THE 64 · QS =114	1
Sam Noble Oklahoma Museum of Natural History, University of Oklahoma	United States	—	1

Institution	Country	World ranking	Citing papers
Universidade Federal de Mato Grosso do Sul	Brazil	SCImago #5107	1
Pontifical Catholic University of Minas Gerais	Brazil	SCImago #8271 · THE 1501+	1
Center for Interdisciplinary Research and Innovation (CIRI-AUTH)	Greece	—	1
National Museum of Natural History Smithsonian Institution	United States	—	1

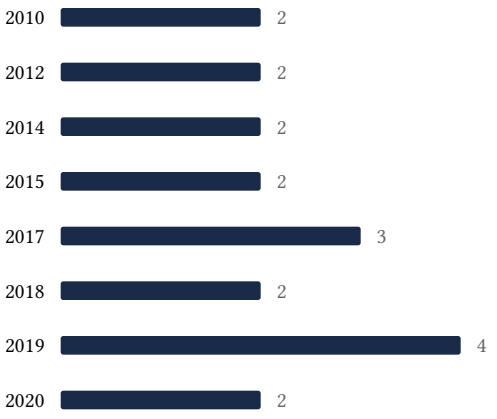
Geographic distribution of citing authors

Country	Citing papers
Brazil	13
United States	6
Germany	5
Japan	3
Malaysia	3
Canada	2
Argentina	2
Colombia	2
Australia	2
Switzerland	1
Greece	1
China	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	Chromosome formulae of Neotropical freshwater fishes	7	8 CFR 204.5(i)(3) — Outstanding Researcher
Contribution 2	Phylogenetic relationships within the speciose family Characidae (Teleostei: Ostariophysi: Characiformes) based on multilocus analysis and extensive ingroup sampling	5	8 CFR 204.5(i)(3) — Outstanding Researcher

Contribution	Core paper	Indep. cites	Supports
Contribution 3	A method for chromosome preparations from large fish specimens using in vitro short-term treatment with colchicine	6	8 CFR 204.5(i)(3) — Outstanding Researcher