

Smithsonian Research Online 2024 Annual Report



Smithsonian
Libraries and Archives

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Introduction

Since the Smithsonian Research Online (SRO) program began in 2008, it has become an indispensable service for those interested in Smithsonian research. SRO has documented Smithsonian research outputs, reported to Smithsonian decision makers, and provided metrics to stakeholders across the Institution to show that the Smithsonian is not just museums in Washington, DC, but a major global research hub, spanning disciplines from “art to zoology.”

Smithsonian Libraries and Archives (SLA) staff work diligently to ensure Smithsonian research outputs are recorded consistently in SRO and subsequently in the broader scholarly output ecosystem. Not only research outputs but the scholars and their Smithsonian unit are recorded to provide high quality and actionable data. This is the defining mission of SRO and vital to documenting the Smithsonian’s position in global research.

Due to recent staffing loss and other changes, it is likely that the Program will have to modify some services in 2025. A small working group has been proposed to address questions the Program may soon be facing. SLA staff will inform primary stakeholders of potential changes and solicit feedback before reformulating operations under a smaller team. As always, we welcome feedback and input on all aspects of SRO.

Alvin Hutchinson
Scholarly Communications Librarian
Smithsonian Libraries and Archives

Program Overview

- Smithsonian Research Online (SRO) collects and manages information describing research conducted at the Smithsonian.
- The Program also manages [Smithsonian Profiles](#), the staff expertise locator based on the publications and other research activity of Institution scholars.
- SRO is managed by staff of the Discovery, Acquisitions and Technical Services division of the Smithsonian Libraries and Archives (SLA) but relies on support from staff across the SLA.
- The information collected is stored centrally and shared widely via regular and custom reporting as well as Smithsonian systems including EDAN and unit websites.
- SLA staff identify and collect many research outputs proactively yet still rely on the researchers for notification of new additions and verification of the accuracy of existing data.

The report is intended to be internal to the Smithsonian Institution and to highlight Program accomplishments, notable research activity and to provide examples of possible analysis. Using SRO to highlight research impact is a key use-case for the program and one that is core to its mission. Feedback from readers of this report provides guidance on service development and desired outcomes from the Program.

Program Feedback

In 2024, users across the Institution expressed their appreciation of the value of the SRO program:

“Thanks very much for your help in keeping track of our work! It is much appreciated”

“. . . thanks for your work on this. It’s an important support for our research efforts. And it’s much appreciated.”

“Thank you for all your work on SRO/Profiles/ORCID – it has been a huge benefit to SI.”

2024 Program Highlights and 2025 Goals

During 2024 the SRO program . . .

- Added a 1968 [research note](#) published in *Astrophysics and Space Science* by Carl Sagan, who was then affiliated with the Smithsonian Astrophysical Observatory.
- Initiated a regular information transfer between OAAI and SRO for the purposes of tracking newly appointed and recently departed research associates and fellows
- Created a persistent identifier (PID) for the Laboratory for Analytical Biology (LAB) for the purpose of tracking published works which credit the LAB in acknowledgements
- Participated in a series of ORCID id orientations at the NMNH Library
- Lost two critical staff to retirement

For 2025 the Program has the following high-level goals:

- **Investigate the creation of an advisory body for the Program to provide guidance on policy and other matters.**
- **Investigate regular access to OAAI information about fellows and research associates.** The SRO keeps information on author-creators as well as their research output. Details such as appointment, separation, renewal, unit and sponsor are key pieces of information that the OAAI can provide the SRO program. Depending on the sustainability of this connection, the inclusion of Institutional appointees in Smithsonian Profiles might be made feasible.
- **Load SRO research authors into a local Wikibase.** The Smithsonian is launching a test Wikibase installation, SI WikiNames, to examine linked data modeling for personal names used across the Institution. SRO's author database is considered one of the core data sets with the robust collection of alternative names and ORCID identifiers for SI researchers. The goal is to test linked data in SRO to internal sources including within the SRO corpus. In a pilot project, the data model showed potential in producing an interesting knowledge graph of SI research to specific publications and to co-authors.

Research Output at a Glance

Research Productivity

- Smithsonian Research Online has tracked **1,953** research outputs published in 2024.
- **1,673** (85.7%) of these outputs are journal articles, published in **608** different journals, representing a 6.2% decrease over the 2023 reported number (1,784).
- **64** are book chapters and **36** are books, which is the same and 9.1% more than 2023, respectively.
- **197** other outputs were collected including datasets, blog entries, reports, exhibitions, and other formats.

Smithsonian-Affiliated Scholars

- There are **1,300** identified individuals who have Smithsonian affiliation and have authored, edited, or otherwise created outputs listed in Smithsonian Research Online in 2024.
- Among all authors in the database, **271** were marked as separated in 2024. This includes all temporary appointees and staff who have contributed to Smithsonian Research Online and who left the Institution during the year. By comparison, the previous year (2023) there were 134 departures.
- In 2024, SI staff or appointees were listed as the **lead author 560** times out of **1,673** journal articles co-authored by Institutional scholars.
- Smithsonian Profiles added **22 awards** for individuals in 2024 including the Award for Curatorial Excellence (Arts Council for the African Studies Association); Grammy Awards for Best Historical Album and Best Album Notes; Meritorious Achievement Award (American Association of Zoo Keepers); and publication awards from the American Institute for Conservation and the American Institute of Aeronautics and Astronautics.
- Smithsonian Profiles continues to increase the awareness of Smithsonian scholarship. Profiles was the conduit for external contact of Smithsonian scholars during 2024. Institution researchers received a total of **2,573 requests** for information or collaboration last year. That compares with 1,900 during 2023.

Collaborations

- Over **89.4%** of scholarly outputs in SRO represent a collaboration with scholars at one of thousands of outside research organizations. **77** outputs include collaborations among Smithsonian units.
- **41** publications in 2024 included 100 or more co-authors, while **25.6%** of all 2024 publications included ten or more co-authors.
- Research Online attributes each research output to **49** different unit and departmental tags as appropriate, representing organizations across the Smithsonian Institution.

Open Access Publishing

- **1,098** (67.0%) of journal articles in SRO published in 2024 are openly accessible, either directly from the publisher or through a repository. This does not include currently restricted publications that will become open after embargo expiration.

Impact

- Smithsonian-authored publications from 2024 have been cited **3,998** times according to OpenAlex.
- **100%** of journal articles in Smithsonian Research Online for the year 2024 have a DOI, allowing for seamless integration with external data and tracking systems.
- Smithsonian research outputs published in 2024 and tracked in Altmetric.com garnered **29,578** mentions, including 22,776 on X (formerly Twitter), 395 blog entries, 1,288 on Bluesky, 366 citations in Wikipedia, and in 4,318 news stories.

Data for analysis was collected on April 24, 2025.

Open Access Publishing at the Smithsonian

In 2024, Smithsonian scholars were listed as author or co-author on **1,004** articles published as open access. **542** were published in a fully open journal and **462** were published as open access articles in a for-pay subscription journal. The article processing charges on these papers amount to **\$2.8 million**, although data on whether the Smithsonian authors paid none, some, or all of the fees are currently not available.

Altmetrics

The Institution's research publications are regularly mentioned in a variety of media platforms. Altmetrics show online attention paid to scholarly works either through social media or other digital communication channels.

Smithsonian research published in 2024 was mentioned:

- Over 22,000 times on **Twitter (now X)**.
- In over 300 **Wikipedia** entries.
- In **global news** sources from 83 countries in outlets as varied as Aljazeera, Euronews and The Straits Times (Singapore).

Publications that drew the most Altmetric attention **among the humanities** during 2024 were Matthew Shindell's "Lunar" (NASM), Laura Mina's "Textile Conservation : advances in practice" (NMAAHC), and Michelle Jackson-Beckett's "Vienna and the new Wohnkultur, 1918-1938" (SLA).

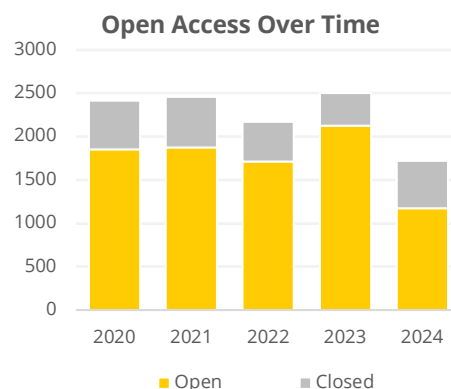


Figure 1: Open Access status of Smithsonian-authored journal articles. Data sources: Unpaywall.org and DOAJ.org. "Unknown" are either DOIs not covered by Unpaywall or were erroneous at the time of analysis.

Selected Analysis

Data from Smithsonian Research Online provides many opportunities for analysis, such as the ones below. Custom reporting is available for Smithsonian staff who are invited to discuss specific needs for analysis with SRO program staff.

Percentage of Open Access Journal Articles, 2019-2024

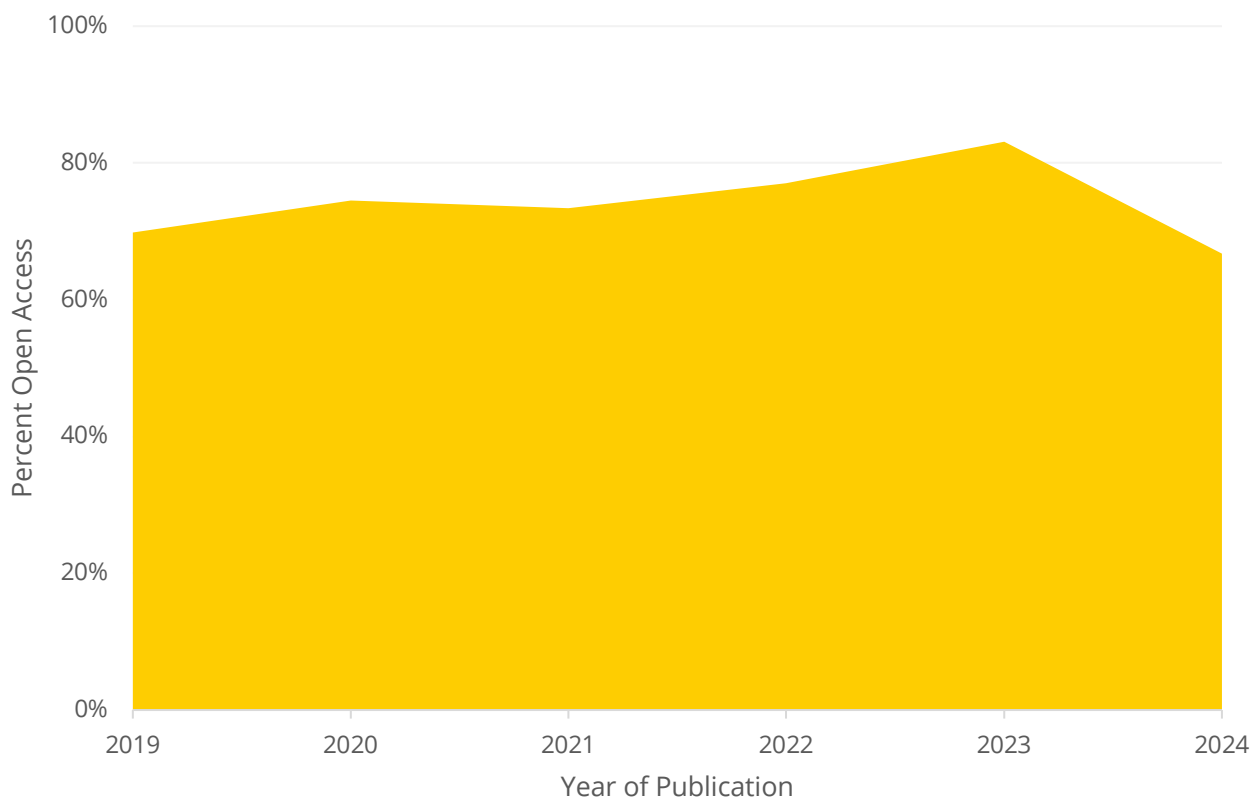


Figure 2: Percentage of journal articles in Smithsonian Research Online that are open access. The Smithsonian Libraries and Archives incorporates data from Unpaywall.org in determining open access status of journal articles, limited to those that are assigned a Crossref DOI.

Top Ten Articles by Altmetric Score in 2024



Evidence for heavy-seed origin of early supermassive black holes from a $z \approx 10$ X-ray quasar
Article in *Nature Astronomy*, January 2024



A 485-million-year history of Earth's surface temperature
Article in *Science*, September 2024



Evolution of bioluminescence in Anthozoa with emphasis on Octocorallia
Article in *Proceedings of the Royal Society B: Biological Sciences*, April 2024



Footprint evidence for locomotor diversity and shared habitats among early Pleistocene hominins.
Article in *Science*, November 2024



Tectonics and Seismicity of the Lunar South Polar Region
Article in *The Planetary Science Journal*, January 2024



Global producer responsibility for plastic pollution
Article in *Science Advances*, April 2024



Safeguarding Earth's biodiversity by creating a lunar biorepository
Article in *BioScience*, July 2024



The coevolution of fungus-ant agriculture
Article in *Science*, October 2024



Phylogenomics and the rise of the angiosperms
Article in *Nature*, April 2024



A new amphibamiform from the Early Permian of Texas elucidates patterns of cranial diversity among terrestrial amphibamiforms
Article in *Zoological Journal of the Linnean Society*, March 2024

Figure 3: Top ten articles from Smithsonian Research Online by Altmetric Score for 2024. Each score is a weighted indicator based on the number of mentions in various attention sources including social media, Wikipedia, news media, Mendeley, policy documents, and more.

Average Annual Citation Rate by Year of Publication

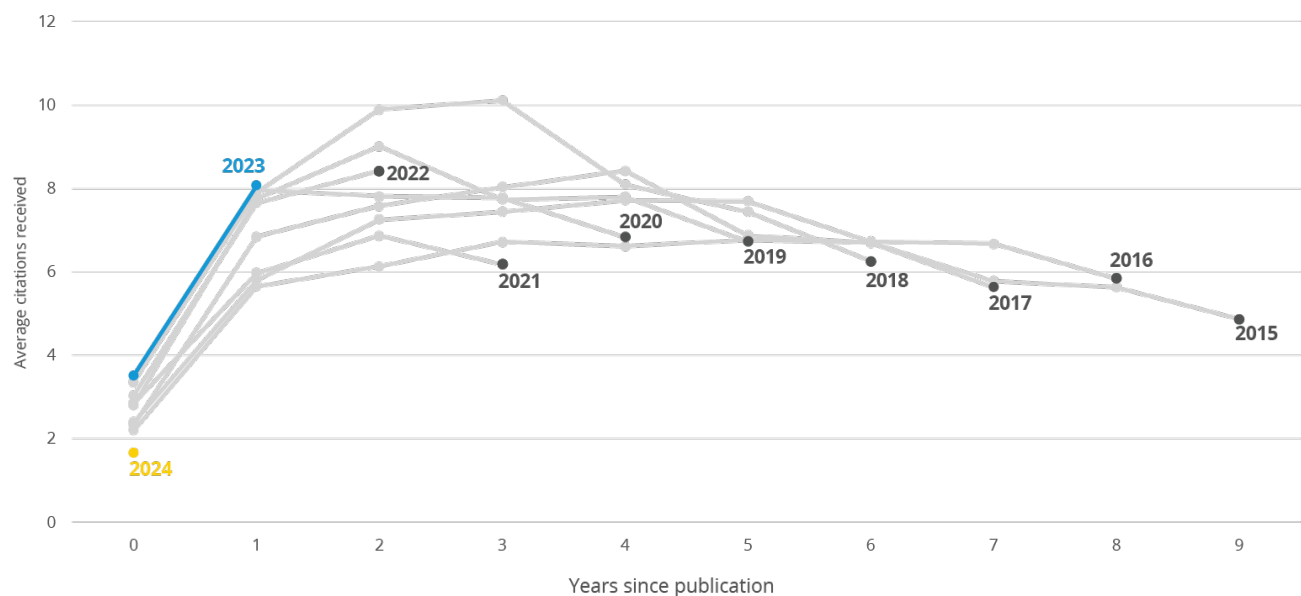


Figure 4: The average number of citations received by publications from a given year across the number of years since publication. The specific dataset for this analysis includes Smithsonian-authored journal articles in Smithsonian Research Online present in OpenAlex.

About this Report

The Smithsonian Research Online annual report was created by staff of the Smithsonian Libraries and Archives and released on May 23, 2025. This report uses data captured on April 24, 2025, from Smithsonian Research Online, Clarivate's Web of Science, Altmetric.com, Unpaywall.org, and The Directory of Open Access Journals. Data are available upon request.

Past annual reports are available at: <https://research.si.edu/annual-reports/>

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