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Google Books

Jody Condit Fagan
James Madison University, faganjc@jmu.edu

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Recommended Citation

Google Books

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Composite Score: ★★★ 5/8

Reviewed by: Jody Condit Fagan   <faganjc@jmu.edu>
              James Madison University Libraries, Harrisonburg, Virginia

Abstract

Google Books' (GB) full-text search of more than 40 million books offers significant value for libraries and their patrons. However, Google's refusal to disclose information about the coverage of GB, as well as observed gaps and inaccuracies in the collection and its metadata, makes it difficult to recommend with confidence for a given research need. While most search and retrieval functions work well, glitches aren't hard to find, which suggests GB development is focused on user experiences that relate to monetization. Privacy and equity concerns surrounding GB mirror those of other big technology platforms. Still, every librarian should familiarize themselves with GB's utility for their work because of the tool's visibility and because it can fill several otherwise unmet needs. Searching within such a large corpus of full-text is a boon for most topics, and the high quality of some of GB's primary source and public domain images may be a goldmine for historical and genealogy researchers.

Pricing Options

Google Books (GB) is ostensibly free to use, but some have noted the costs, even harm, to consumers from Google's monopoly on the search advertising market (Newman 2014). The content in GB is available in full text when copyright permits (e.g., the public domain), and Google will often provide a limited amount of copyrighted material unless explicitly prohibited.

Product Overview/Description

GB began in 2004 "to bring the world's books online so that anyone can access them" and now features full-text search of more than 40 million publisher-supplied, self-published, and author-supplied books in over 400 languages (Lee 2019), as well as select magazines and newspapers. Searches on eight random words ("women," "food," "plants," "church," "Enkidu," "justice," "paisley," "snow") with and without the Free Google e-book limiter suggest 30% to 70% of GB is available in free full text. The books have been scanned, converted to text using optical character recognition, and stored in Google's database (see Leetaru 2008 for technical details about the original scanning project). Google is continuing to scan materials—they believe there are 130 million titles in the world—and to improve their algorithm (Tacyher 2010; Rosenfeld 2017). GB was first created with the help of major libraries under the name Google Print Library Project (now called the Library Project). The full history and legal issues surrounding the creation and continued existence of GB have received much more attention than GB's utility; these are well-summarized and analyzed by Hoffman (2016) and Somers (2017). GB has been hailed by some as a societal, economic, and educational advance, and by others as an exacerbation of existing information inequality as manifested by low-quality scans, "the politics of online search," and "Google's conception of the value of information" (Hoffman 2016).

Google does not offer much information about GB's collection, and bibliometric research is stymied by Google's bot-detecting algorithms; even in the course of writing this review I was interrupted numerous times by GB asking if I was a robot. Fagan (2017) found only seven citations in Library and Information Science and Technology Abstracts and EBSCO Discovery Service on topics related to GB's composition and utility for scholarly research, even when supplementing these searches with follow-up explorations in Google Scholar and in bibliographies. Pertinent findings included:

- There are many errors with GB metadata, including misspellings, inaccurate dates, and inaccurate subject classifications (Harper 2016; Weiss 2016).

- GB appears to index most if not all of books that appear in WorldCat, although "fewer than 10 percent have free full view and about 15 percent have snippets and preview" (Chen 2012, 514).

- Coverage of pre-1872 titles in full text was found to be very good (Jones 2011), with many primary sources for U.S. historical research considered "gold" (Mays 2015).

- Xiong (2010) found GB could be used as an alternative to *Making of the Modern World* (1450-1850), but found MOMA's consistency and reliability worth the cost for libraries that can afford it.

- There are suspected imbalances in terms of geographic, linguistic, and disciplinary coverage (Abrizah and Thelwall 2014; Kousha and Thelwall 2015; Mays 2015; Weiss 2016)

- Harper (2016) found GB's value for health science libraries was limited to niche research such as the history of medicine.

Updating Fagan's work in February, 2021 found 5 additional citations:

- Gasparotto (2018) found access to OA or cost-free Latin American scholarly monographs in GB varied widely across five test searches—for full text, from 0% to 30.6% of searches found full text, and 0% to 26% offered "Search inside" (163).

- Sutton and Griffiths (2018) found that GB's new algorithms interfered with their research methods to investigate the history of terms, words, and names using GB.

- Fagan and Willey (2019) reported that GB found 20 of the 25 books and book chapters in Fagan's (2003) bibliography of Black Athena.

- Bashir, Nasreen, and Loan (2020) reported results from searching *peace* and *war* in GB: 30.6% and 37% of results were available in free full text, but only four were published after 1900 (6-7).

- Ignatovich (2020) found all the digital full text sources of information for her searches on variants of lifelong learning and lifelong education from 1839 to 1949 came from the UK and the USA and were unevenly distributed over time (456). For example, after 1919, the proportion of US content rose from 39 to 68% of docu-

ments (459). "Almost half" the texts Harper found lacked important information about the authors, articles, and publishers (459).

Whether and how GB is included in a Google or Google Scholar search is unclear. When exploring a dataset including 17 books or book chapters authored by JMU faculty, French and Fagan (2019) found GB results frequently appeared in the top 50 results for Google Scholar and Google results. However, during this review, some GB items were not found using a regular Google search—at least, not on the first few results pages. Black Athena and Charismatic Leadership in Organizations GB pages were not found in the first 50 Google search results, but Plant Communities in Southern Illinois and Murder in Metropolis GB pages were.

GB has a related tool called Ngram Viewer that traces use of words over time (Meadows 2010). Bauder (2019, p. 14) noted that "an avalanche of papers" have been written using its data, despite qualms about the corpus's representation of what was being published or read in a given year. A search on "Google Books" in GB's own Ngram Viewer shows interest surged in 2014, then plummeted 2016-2018, but has been trending upwards since.

GB has an API that has been used for research into identifying citations to grey literature (Kousha and Thelwall 2015; Bickley, Kousha, and Thelwall 2020), citations to news stories (Kousha and Thelwall 2017), and textbook costs (Costello, Bolger, Soverino, and Brown 2019); however, reviewing the API is beyond the scope of this review.

User Interface/Navigation/Searching

The GB main search features a single search box, a link to My Library, and in the upper right, navigation to other Google products and one's Google Account (or Sign In). Advanced Book Search can be found from the results page navigation under Settings. The advanced search main boxes include With All of the Words, With the Exact Phrase, At Least One of the Words, and Without the Words. Here the user can select the number of results to display per page (up to 100). The user can limit to just books, just magazines, or just newspapers. A second set of limiters can narrow the search from All Books to those with Limited Preview and Full View, Full View Only, or Google eBooks Only. It is unclear how these limits relate to the Results Page toolbar limits Any Books, Preview Available, Google eBooks, and Free Google eBooks. A language limiter has 46 languages, and a date-range limiter offers the ability to limit by month and year. Four free-text limit boxes include title, author, publisher, and subject, and two additional boxes permit ISBN and ISSN entry.

The results page from a GB search is the main Google results page (as can be verified by the URL), with Books highlighted under the search box in the usual Google navigation bar, and a secondary Tools bar repeating three of the Advanced Book Search limiters in drop-downs and offering sort by date instead of the default sort by relevance. Hiding the Tools bar (by clicking the Tools button) reveals the number of results retrieved.

Clicking on a title that has a Preview button displays preview pages or "snippet views" available with search terms highlighted. Full previews vary in length as authorized by the copyright holder; snippet views are displayed unless the copyright holder objects. At the top of the Preview is a drop-down menu that navigates to the book sections or chapters; a "Search in this book" box; zoom and page layout tools; and a "…" menu with links to Share, Embed, Buy this book, Find in a library, Help, Terms of Service, the publisher, and Copyright information; and finally, an "X" to close the Preview and show what I will call the "GB record page."

The GB record page for a book has some record-like elements in the main panel, including ISBN, publication information (with hyperlinked publisher), digitization date and source, hyperlinked author, page count, format, language, other metadata, and the option to Create Citation for copy/paste or download in BibTeX, EndNote, or RefMan. Clicking on the author name produces a new GB results page, possibly with a Wikipedia link at top, then books with the author's name as a phrase search, e.g., "inauthor: Martin Bernal." If an abstract is available from the publisher or another source, it is displayed immediately following.

A prominent link to Get the Book provides Search and Buy links out to commercial publishers and a BORROW panel with a search box for city or zip code entry to find nearby libraries with the item, as well as a search button for WorldCat. Another top-level link, to Other Editions, offers filters by Relevance, Format, Language, Year, Publisher, and Preview/Purchase options.

Surrounding the metadata panel are a panoply of tools for each title, including About the Work, information about the author and other works, reader reviews, and common terms and phrases from the book in a word cloud, which launch Search Inside. The Search Inside feature supports finding words or phrases and displays snippets of where they appear—even in copyrighted works. Additional panels preview the functions Get Book, Other Editions, More by Author, and Similar Books discussed earlier.

For those logged into a Google account, Add to my Library provides four default Shelves (GB's word for lists of books): Favorites, Reading Now, To Read, and Have Read, plus any custom Shelves the user has created. After selecting one of these, the My Library screen shows horizontal carousel panels for each Shelf, as well as Search My Library and the ability to make new Shelves named what you will; these can be public or private. Google also offers Shelves for My Books on Google Play, Books for You, and under My History, links to Purchased, Reviewed, Recently Viewed, and Browsing History. For me, Books for You and Browsing History seemed to relate to recent searches on Amazon. An advertisement for Get Textbooks on Google Play appears here as well as on the main page.

GB's footer provides links to Send Feedback which takes a screenshot and offers a text box for input. Help goes to "Google Search Help" from the GB results page, but to "How to use Google Books" from a GB record page. As of February 2021, there no longer seem to be pathways to Classic Google Books.

When not logged in, Search Settings include SafeSearch filters, to hide "explicit content, like pornography," results per page, and toggles for private results (to help find more relevant content for you, including content and connections that only you can see);.autocomplete with trending searches in your area; open results in new window; search customization; increasing relevance by using your searches on google.com from this browser; and region settings, with many countries listed. When logged in, Search Customization changes to Search History, which uses "things you search for, results you click, and more" to affect your search results, and Spoken Answers allows GB to speak answers out loud in response to the user's spoken questions.

Running GB through the Web Accessibility Evaluation Tool suggests most of the search and results interface is built with accessibility in mind, for example, using structural elements such as headings to organize pages. However, there are missing form labels, some links with very low contrast, and other minor errors. A human review of the HTML shows the results page do not have alt tags for book covers, and the book main pages lack alt tags for publisher icons. As there is

TABLE 1　Google Books Searches for Six Items

Book	Results page / Main page	Full text / access
Cruise, Lonne. 2003. *Murder in Metropolis.* Martinsburg, WV: Quiet Storm (hardcover).	182,000 results. The paperback edition from NADAC PUB ranked #1; More Editions showed both hardback and paperback editions from the original publisher, Quiet Storm. Metadata adequate.	No preview or Search Inside available for the edition shown, but Search Inside available for the original hardback edition. Links out to booksellers all worked; Link to WorldCat only worked on some editions.
Hauffe, Daniel. 1981. *The Illhiedrin Book.* Decatur, IL: Judges Guild, Incorporated.	One day, this had 777 genre-relevant results. With quotes, 649 results. The next, 789 results and 660 results. Both times, the book was not found in GB. Results page displayed a link to the Wikipedia page for the item, and to a few other Dungeons & Dragons adventure modules	NA
Voigt, J. W., & R. H. Mohlenbrock. 1964. *Plant Communities of Southern Illinois.* Carbondale: Southern Illinois University Press	619,000 results. The first edition ranked #1; GB Main page had a tab for Published Collection revealing this became part of a series.	Preview and Search Inside. A Search inside" on "pine" showed five results on pages XI, 60, 62, 166, and 180. Search inside on "flabelliforme" showed four results. Metadata good. Links out to WorldCat and Amazon found this book; links to Barnes & Noble and Books-A-Million failed (a title search in B-A-M found two correct matches).
Lockard, Mel. 1995. *... and even the stump is gone.* Tuscon, AZ: Pepper Publishing	2,000,000 results. Item not found. A full page of results features items with the words "and," "eve," "over," "stump," and "still" highlighted as matches to search terms. A second search using quotes around the title found four results, two of which referenced this book in their bibliographies.	NA
Hart, Janet. *File for Death.* 1965. London: Waterlow and Sons, Limited.	7,700,000 results. The book was not found, even when putting the title in quotes. Results were from legislative sources using this phrase. Adding the author's name to the quoted search terms produced 32 results, mostly monographic bibliographies listing this title.	NA

no text preview of the books, that aspect is also not accessible. As far as the full-text book images, Google notes that if a Google Play book features "Flowing text," so it can be read aloud using a screen reader, it works best with specific browsers and screen readers. Junus (2012) noted that GB provides full-text in "mixed accessibility formats, including EPUB, which can sometimes be read using a screen reader through a web browser, depending on the publisher, but also non-OCRd scanned PDF images, which are not accessible by any screen reader technology." GB's lack of attention to and transparency about its accessibility is disappointing, especially given their resources.

Critical Evaluation

Except where noted, all test searches were performed in Firefox, logged out of any Google accounts and with Customized Search turned off. Searches were performed in January and February 2021, on two different devices. When searches were repeated to double-check results, there were small differences; for example, an early search on "black Athena" found a free full-text book from 1887, but later searches failed to retrieve it. There were also interface quirks. For example, sometimes when there were fewer than a full page of results, the Google pagination displayed at the bottom as if there were a lot more results, but clicking on the pagination produced No Results pages. At least once there was a result that said "Found Inside" with

a snippet view but then when the result was clicked on, the snippet came up, but then disappeared and No Results Found displayed.

There were also issues on the GB record page. The ISBN-created links to booksellers and WorldCat only sometimes worked, seemingly because GB chooses an ISBN that does not produce a result in the target website. GB's zip code/city library locator provided poor results compared to the WorldCat lookup, sometimes finding no libraries or more distant libraries when a book was available in several closer locations. The Create Citation link works reasonably well, although book titles are not set in italics, and there are small punctuation issues. The More by Author offers no sort or filter options; neither did Similar Books (even for extremely productive authors such as James Clavell). Librarians are used to such difficulties, but given Google's power, expertise, and industry connections, it was a little disappointing they're not doing better with some of these integrations. Unlike Google Scholar, there are no GB integrations with library link resolvers, although GB does offer help with creating stable links to individual titles.

GOOGLE BOOKS SEARCH, KNOWN ITEM

Five books from the author's home library were used as test items. The titles of the books in Table 1 were entered into the main GB search box with no quotes.

Overall, Google Book's search worked well for known items, although GB's failure to find most of the examples chosen raises questions about GB's coverage.

ADVANCED SEARCH

The language limit was tested with Spanish and French (languages known to this author) for *The Audacity of Hope*. Searching on "the audacity of hope" limited to Spanish found *La audacia de la esperanza* ranked number #4; when using the French limiter, *L'Audace d'espérer* was ranked about #22. Searching the Spanish or French titles found the books ranked #1. This suggests searching in the language selected is helpful. Once a language limit is chosen, it is sticky; additional searches are performed with that limit.

The title and author limits worked well for all titles tested (where a result existed in GB). The search box helpfully shows syntax that can be used in GB's search box directly, for example, "intitle:audacity intitle:of intitle:hope" or "inauthor:barack inauthor:Obama" or "inpublisher:quiet storm." However, of these, only the "intitle" syntax also works in Google's regular Web search. Due to GB's known metadata issues, it seems best to search loosely using these limiters; e.g., without quotes, and for short forms like "southern Illinois university" rather than "southern Illinois university press."

The Subject limit is of dubious value; searching on "tibetan buddhism" retrieved just 34 results; "black athena" retrieved 1 result, and "martin luther king" retrieved no results. Although the search page suggests quotes can be used or not used, when I entered terms with no quotes, quotes were added for me.

The date limit, ISBN search, and ISSN search all seemed functional, although ISSNs need to be entered without a hyphen (e.g., issn:00129011) even though the example provided has a hyphen.

Overall, the Advanced Search page could be useful for niche purposes, but seems in need of attention from the quality assurance department.

TOPICAL SEARCH

Four topical searches were chosen from the author's areas of interest. Table 2 shows the search terms used, results found, and the number of results in the first 50 that had the "Found inside" or "Read" (free full text) feature.

All four test searches produced relevant results; most results had Preview and More Editions. More Editions sometimes found different titles entirely, not editions. For example, clicking More Editions on *Black Athena: The Afroasiatic Roots of Classical Civilization Volume I* (1987) also found *Black Athena Writes Back* (2001).

BOOK IMAGES AND OCR

A full investigation of the quality of Google Book image scans and OCR is beyond the scope of this review, however the titles encountered in response to searches had reasonably good scans; this was a similar finding to Ignatovich (2020). Some OCR errors were detected by the presence of items in search results (matches on "still" for "stump," for example). Parks (2014) noted that GB does not include page numbers on the scans for some recent publications, stymying citation of sources—though he blamed the publishers.

MAGAZINES AND NEWSPAPERS

The same four searches were repeated, limiting to magazines, then to newspapers (see Table 3).

All magazines found during this review were scanned in full color, which beats the black-and-white microfilms libraries may have, especially for photographs of people of color. Search terms were highlighted in yellow and may appear in advertisements, which may be an advantage or disadvantage depending on one's purpose. Newspapers were mostly from the U.S. and Canada, with the *Glasgow Herald* a notable exception. Browsing newspaper results was limited to the first 200, even if more were found. All in all, the dates of results retrieved for magazines and newspapers ranged from 1960-2008.

Without knowing the coverage, titles, or dates of newspapers and magazines in GB, it is hard to imagine a reference librarian recommending the tool for periodical searching. A fuller examination of newspaper coverage is limited by the way GB limits results sets to 200 at a time. As Hoffman (2016) notes, "This relative impenetrability is especially troubling in light of the power Google has to direct and shape the flow of information online, determining what content to display and what content to ignore in response to a given query" (86). Given the high quality and historical coverage of the scans, GB's magazines and newspapers may be quite useful for low-stakes school papers and idiosyncratic needs for which the seemingly scattershot collection serendipitously fits.

Competitive Products

The Internet Archive digitizes books (over 4 million of them so far) and mirrors content from other book sources, including GB; it also provides a collection of contemporary e-books that can be freely borrowed (Internet Archive 2021). As of January 3, 2020, HathiTrust has digitized over 8.4 million book titles from Google, the Internet Archive, Microsoft, and member libraries and institutions (HathiTrust 2020). Both these sites offer sophisticated search and browse interfaces to their collections. National and international digital libraries such as Gallica (<https://gallica.bnf.fr/>) offer materials of various

TABLE 2   Topical Searches in Google Books

Search terms	Results	Found Inside	Read (free full text)
"black athena"	About 43,000	NA	No results
"tibetan buddhism"	About 822,000	6 of the first 50 results	1 title - *Tibetan Buddhist Essentials: A Study Guide for the 21st Century* (2018)
"martin luther king"	About 5,750,000	2 of the first 50 results	1 title - *Martin Luther King, Jr. National Historic Site … Draft Impact Study Environmental Impact Statement* (1983)
"charismatic leadership"	About 85,300	26 of the first 50 results	No results

TABLE 3   Google Books Searches to Limited to Magazines or Newspapers

Search Terms	Magazines	Newspapers
"black athena"	5 results. 2 from *New York Magazine,* one from *Mother Jones,* 1 from *Billboard,* and 1 from *The Crisis.* Dates ranged 1990-1999.	37 results. Date range of first 50: 1960-2008.
tibetan buddhism	10 results. 7 of them from *Yoga Journal.* Dates ranged 1977-2007.	4,050 results* Date range of first 50: 1976-2008.
martin luther king	264 results. Almost all of the first 50 from *Ebony* and *Jet.* Dates ranged 1961-2008.	156,000 results* Date range of first 50: 1968-2008.
"charismatic leadership"	5 results. From *The Rotarian, Jet, Life, CIO,* and *Pratiyogita Darpan.* Dates ranged 1971-2006.	721 results* Date range of first 50: 1966-2007.

*Only 200 results could be browsed.

types, including books, newspapers, maps, manuscripts, newspapers, and more. Innumerable commercial online book collections defined by publisher, subject, topic, time period, and/or other criteria are available through institutional or individual subscriptions; lists of these can be found on most academic library web sites (e.g., <https://guides.lib.jmu.edu/az.php?t=24578>).

A major difference between all these competitors and GB is that one can quickly answer questions about the scope and coverage of collections, which is not possible with GB. HathiTrust and Internet Archive even provide statistics and visualizations of their collections. HathiTrust also offers metadata for bulk download in MARC format (Bauder 2019). Google's failure to do anything of the sort, and to actively prevent bibliometric research into the searchability of its primary user interface, is a serious flaw that limits when GB can be recommended by information professionals. Finally, while HathiTrust and other digital libraries seem on the rise, industry experts have wondered whether GB is in decline, noting their blog was retired in 2012 in lieu of integration with Google's main blog (Rosenberg 2017). Development is now described as a "game of inches—less moonshot and more, say, satellite maintenance" (Rosenbert 2017, n.p.).

Purchase & Contract Provisions

Google's main terms of service and privacy policy also apply to GB. Additional GB terms apply if you purchase digital content, and you only have to keep using GB to accept any changes to the Terms. GB terms spell out how you can and can't use digital content, including Google's right to limit the number of devices you use to access content and including whether and how you can select, copy, and paste the content. Terms related to user-submitted content such as comments and reviews include granting Google a "perpetual, irrevocable, worldwide, royalty-free, and non-exclusive license to reproduce, adapt, modify, translate, publish, publicly perform, publicly display, create derivative works of, and distribute any User Content that you submit, post, or display on or through, the Service, without any compensation or obligation to you" and the right to delete your content at any time without notice. Additional terms relate to timely payment,

refunds, privacy, and their right to terminate your access to even purchased content if you fail to comply with any of the teºrms. Finally, the terms state that Google can discontinue GB any time without liability, and they will provide content purchasers notice so they can download the content (if permitted by law).

Some terms from Google Play apply to GB, including their approach to sharing personal information with third parties, and when your GB search and use information is logged (primarily if you are logged into a Google Account). The policy explains that they store the unique ID numbers from your devices on their servers in order to enforce limits on page views and accesses, to fulfill contractual commitments to those who license GB books. They don't provide titles of books to credit card companies but also don't allow you to delete titles from your account history. They also store some information about which specific pages you have viewed for security monitoring, to provide useful navigation, and to enable consistent reading position. The term related to special legal privacy protections for users suggests Google will resist requests from law enforcement or litigation and notify users, and says they are committed to notifying the affected user if they receive such a request.

Contact Information

Google
1600 Amphitheatre Parkway
Mountain View, California 94043
Product URL: <https://books.google.com>

Free Text Keywords: Google | search engine | web search engine | e-books | ebooks

Primary Category: Multidisciplinary (or interdisciplinary)

Secondary Categories: Art & Architecture; Business & Economics; Ethnic, Gender, and LGBTQ Studies; General Reference; Government Information; History & Area Studies; Humanities; Language and Literature; Library and Information Science (LIS); Medicine, Nursing & Health; Multidisciplinary (or interdisciplinary); Music, Theater, Film Studies; Philosophy & Religion; Political Science & Law; Science, Technology, Computers, Engineering (including Environment), Mathematics; Sociology, Education, Anthropology, Psychology; Other

Type of product being reviewed: Ebook collection; Website

Target Audience: Secondary; General public; Undergraduate (including community colleges); Graduate/Faculty/Researcher

Access: Hybrid (some OA)

Google Books Review Scores Composite: ★★★ 5/8

The maximum number of stars in each category is 5.

Content: ★★★★

Although GB's collection defies empirical description, it is large and there are many reports of its utility for academic and general purposes.

User Interface/Searchability: ★★★★

GB's default algorithm and the GB advanced search generally work well. Links and gathered metadata provide a rich experience. Parts of the interface, such as the native library locator, are a little clunky.

Pricing: ★★★ 1/2

While some of GB is free, that comes with the hidden price of harvesting user data. Pricing for licensed content is average.

Purchase/Contract Options: ★★★

Only some of GB is open access. Google's self-centered terms of service and refusal to disclose information about the collection are major strikes.

Authentication

Authentication to GB is exclusively through Google Accounts, and permits purchase of content, use of My Library, and enhanced tracking features to support fuller user of the service. As with other Google services, when you are logged in to your Google account, unless you disable tracking and location services (Germain 2020), your use of GB may be shared with other Google apps (e.g., YouTube, Gmail) when you are logged in or are using Google Chrome, to inform advertising and recommendations.

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About the Author

Dr. Jody Condit Fagan is professor and strategic research and assessment librarian at James Madison University, Harrisonburg, VA. She previously worked in library public services, technology, and management positions. Her Google Scholar Profile <https://scholar.google.com/citations?user=bqqlYxAAAAAJ&hl=en> and curriculum vitae provide full coverage of her research interests. ■