

# Librarian Reserve Corps: Literature indexing and metadata enhancement (LIME) observations from a year in the field

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## Abstract

The Literature Indexing Metadata and Enhancement subgroup of the Librarian Reserve Corps was first formed to assist with the indexing of daily publication lists for distribution within the World Health Organization's Global Outbreak Alert & Response Network (GOARN). Here we reflect on the trends that emerged from this work from a year of cataloguing COVID-19 literature. Preprints are now a crucial part of academic research. It is evident that librarianship is evolving and should continue to evolve post COVID-19. Open Access literature has been beneficial for everyone, including librarians, researchers, the media, and the public. Global collaboration is beneficial to seeing new perspectives. It was also evident during this year that trends in literature took about 10 days to cross over to the media.

## Keywords

librarian reserve corps, trends, open access, COVID-19, preprints, collaboration

## Note

The Librarian Reserve Corps can be found online at:

<https://librarianreservecorps.libguides.com/home>.

The LIME catalog can be accessed publicly at:

[https://www.zotero.org/groups/2477506/lrc-daily\\_pubs/library](https://www.zotero.org/groups/2477506/lrc-daily_pubs/library)

## When Life Gives You Limes

Allow me a moment to be dramatic. It is March 11<sup>th</sup>, 2020, the day the United States shut down. Within hours of each other the following events happened. Dr. Anthony Fauci testified before the House Oversight and Reform Committee warning that the COVID-19 outbreak in the States is going to worsen (House Committee on Oversight and Reform, 2020). WHO (World Health Organization) declares a global COVID-19 pandemic (Ghebreyesus, 2020). Both San Francisco (Breed, 2020) and Seattle (O'Sullivan, 2020) implement orders banning large gatherings. Major (ESPN News Services, 2020) and College (NCAA, 2020) league basketball is cancelled for the rest of the 2020 season. Chicago cancels St. Patrick's Day (Bynum, 2020). Former

President Donald Trump restricts European passenger travel to the U.S. (Mascaro, Taylor, Colvin, & Miller, 2020). And Tom Hanks and Rita Wilson announce they have tested positive for COVID-19 (Hanks & [@tomhanks], 2020).

March 12<sup>th</sup>, 2020 Elaine Hicks, a Research, Education, & Public Health librarian from Tulane University sends out an email via a listserv through the Medical Librarian Association asking if anyone is interested in helping the Global Outbreak Alert and Response Network (GOARN), which is a special collaborative organization sponsored by the World Health Organization (WHO), to decipher the astronomical number of publications being released every day on COVID-19.

March 13<sup>th</sup>, 2020 Elaine Hicks (E. Hicks, personal communication, March 13,2020) sends out this follow-up email:

*...This is becoming a librarian version of the Medical Reserve Corps. 26 hours after posting the Medical Library Association listserv, I have over 58 responses which associate names with levels of comfort in emergencies. There is a role for everyone. Those not comfortable, who need structure in order to act, will have a role after we have a process developed. I'm going to close the survey at 3:00 pm today in order for West Coast and international members to respond and have a cadre ready for work as early as Tuesday morning...*

And thus, on March 20<sup>th</sup>, 2020, the Librarian Reserve Corps officially entered the COVID-19 pandemic.

### LIME-aid

Since then, the Librarian Reserve Corps (LRC) has grown into a robust group of international volunteers from thirteen countries and growing. The mission of the LRC is “[to] respond to information needs in public health emergencies in partnership with the World Health Organization’s Global Outbreak Alert & Response Network. The advanced library and information skills of LRC volunteers contribute to the prevention and control of disease outbreaks and other public health emergencies by providing responders with the latest information relevant to their mission areas.” (Librarian Reserve Corps, 2021).

The LRC developed workgroups within itself that focus on individual needs of GOARN members. The Literature Indexing and Metadata Enhancement, or LIME, group was one of the first workgroups to form and with the mission to catalog and classify the daily publications released each day related to COVID-19. As time has moved on, there have been several iterations in the methods LIME uses to review and catalog COVID-19 publications. The following chart breaks down the, as of today, three phases of reference software LIME has used and totals the amount of all screened COVID-19 literature. Additionally, LIME, in collaboration with the WHO library, has developed two special taskforces for COVID-19 literature review.

Date	March 2020- May 2020	June 2020- August 2020	September 2020-April 7, 2021
Reference Management Software Used	Zotero	Distiller SR – independent LRC catalogue	Distiller SR- combined LRC catalogue with WHO catalogue
# of Articles in total screened by LIME	18859	19073	14,475
Total articles screened as of April 7, 2020	<b>52,407</b>		

The LIME Rescue Taskforce focuses on reviewing the publications that were excluded from the COVID-19 publication catalogue and incorporating relevant publications back into the COVID-19 catalogue; this is called rescuing. As of April 7, 2020, the LIME-Rescue Taskforce has reviewed 11,678 publications and rescued 455 relevant articles.

The LIME-DeDup task force reviews publications in the official WHO COVID-19 catalogue for any duplications of publications and removes the duplicate. As of February 25, 2021, LIME-DeDup has confirmed 1,554 duplicate pairs of publications and removed the duplicates from the database. It has been a full year since the formation of LIME. Here are some observations that deserve some limelight.

### Librarianship is evolving

When year after year of list is published detailing why librarianship is a dying field, this past year with LIME has, I believe, soured that worn out statement even more. Gone are the days of librarian stereotypes. Those do not belong in this space anymore. Librarians are information professionals. That makes us a first line defense in the war on disinformation. Librarians understand that information is organic and always evolving and, therefore, so should librarians. Ask a librarian what their specialization is? Not a one will say reading books.

Librarians, to name a few, work in data science, data information access and technologies, digital humanities, cultural heritage informatics, knowledge organization, user experience, law, medicine and health, children services, academics, social services, human computer interactions, and many more areas of information and library science that are never parts of the go-to librarian stereotype. The COVID-19 pandemic has proven the adaptability of librarians, whether its curb-side services, mobile internet vans, adapting to preprints, or cataloguing COVID-19 literature. The Infodemic exposed crucial roles that librarians can and should fill. Our field is not dying. Our field is evolving into something new and I welcome that.

### Global collaboration brings vast perspective

LIME is richer in what it can provide because each member brings a unique perspective to the work being done. As of today, the LRC has members from thirteen countries, as of today, and continues to grow. Not all of the LRC librarians are fluent in the same topics. This sounds like a detriment, but it really worked to our favour. And because of tools like Zoom and Google Docs, we were all able to converse and refine our cataloguing systems that reflected different types of information education, varying levels of medical knowledge, and an equal desire to be collaborative and contribute our skills to pandemic research.

Not only were the different subject expertise from each LRC volunteer useful, but bringing in the perspective of librarians from Australia, Canada, Ireland, Africa, and the United States allowed for cultural nuance that would have been missing without these people involved. This begs the question, then, what other things could librarians accomplish together if we all collaborated globally? And as this is a very easy thing to do with modern technologies, why are we not doing it more?

### Preprints aren't going anywhere

A very common theme for 2020 was adapting to non-peer reviewed preprints becoming more acceptable in academic literature and available in the public infosphere. There is a place for preprints in all our libraries and research, COVID-19 has proven that. And while preprints servers were already emerging before the events of 2020, preprints became a crucial method to streamline information and really gained traction and normalcy during the pandemic. Preprints are here to stay. Preprints are more accessible to all because they are not placed behind a paywall and are not peer-reviewed, which shortens the pipeline from submitting your preprint to a server and other researchers having access to it; both practices make preprints a faster method of distributing information. Which has resulted in the ways we review literature having to change as well.

In the last year, I have seen librarians adapt systematic reviewing methods to include preprints. I've assisted medical staff in locating major preprints being discussed in the medical field and the media. The question here is how do we, as librarians, determine what is reputable from preprint servers? LIME volunteers even reviewed preprints for the WHO.

The question is not if preprints are legitimate forms of information, the question is how do we adapt to this new form of information in a safe and responsible way? Is it our responsibility to review preprint text for any forms of academic or scientific fallacies? How can we prevent disinformation from preprints with errors in their research or blatant evidence manipulation from harming those who read it? Is this even something librarians should be considering?

### Trends were easy to spot

Perhaps one of the more interesting things to recall from this experience was watching the trends in the literature emerge compared to the trends in the media and how they correlated and worked against each other. Trends emerged in the literature being evaluated by LIME either before or after trends crossed over to the media, but more interesting is the word choices being used and released into public knowledge. Hydroxychloroquine is the best example, although there are others. Appendix 1 contains graphs that have been captured from Google trends. Google trends tracks peak popularity of searches. Numbers represent search interest relative to the highest point on the chart for the given region and time. A value of 100 is the peak popularity for the term. A value of 50 means that the term is half as popular. A score of 0 means there was not enough data for this term (Google, 2021).

Though there are many evident trends in the literature that LIME reviewed, we will focus on the word hydroxychloroquine for an example of the trends LIME could predict. Image 1 shows the Google trends graph for hydroxychloroquine analyzing google searches for the word hydroxychloroquine within the United States from April 1, 2020 to May 31, 2020. This time frame and sample location are used for comparison reasons as the data LIME has currently on media trends relates only to the United States. Google trends data shows that on April 4<sup>th</sup> searches for the word hydroxychloroquine increased by 86%. For the time period between April 12<sup>th</sup> and May 17<sup>th</sup>, Google searches for hydroxychloroquine remained steady in the 5-20% search range then spiked by 100% on May 19<sup>th</sup>. Compare image 1 to image 2 which contains data gathered from MedicaCloud to represent the use of the word hydroxychloroquine in the media.

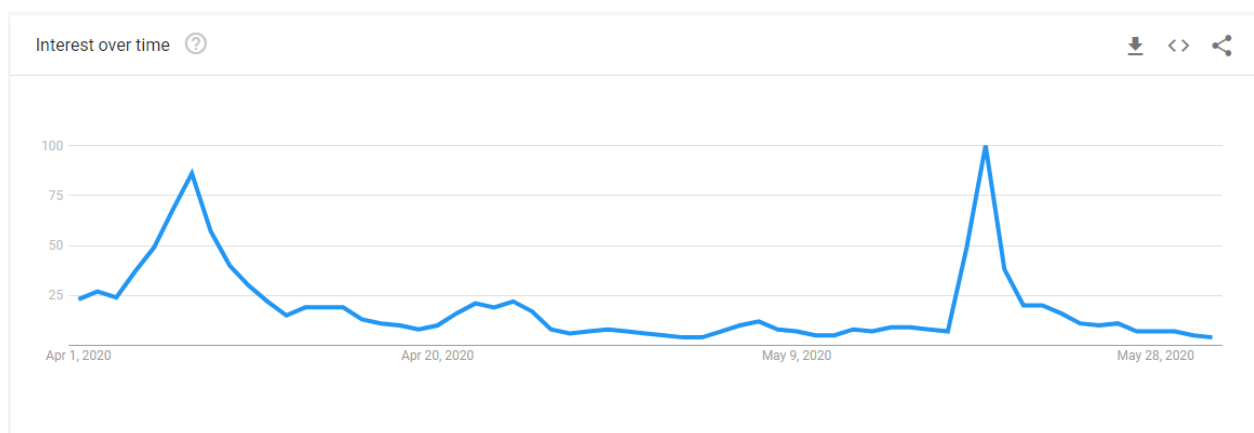


Image 1: Google search trends of hydroxychloroquine from April 1-May 31, 2020.

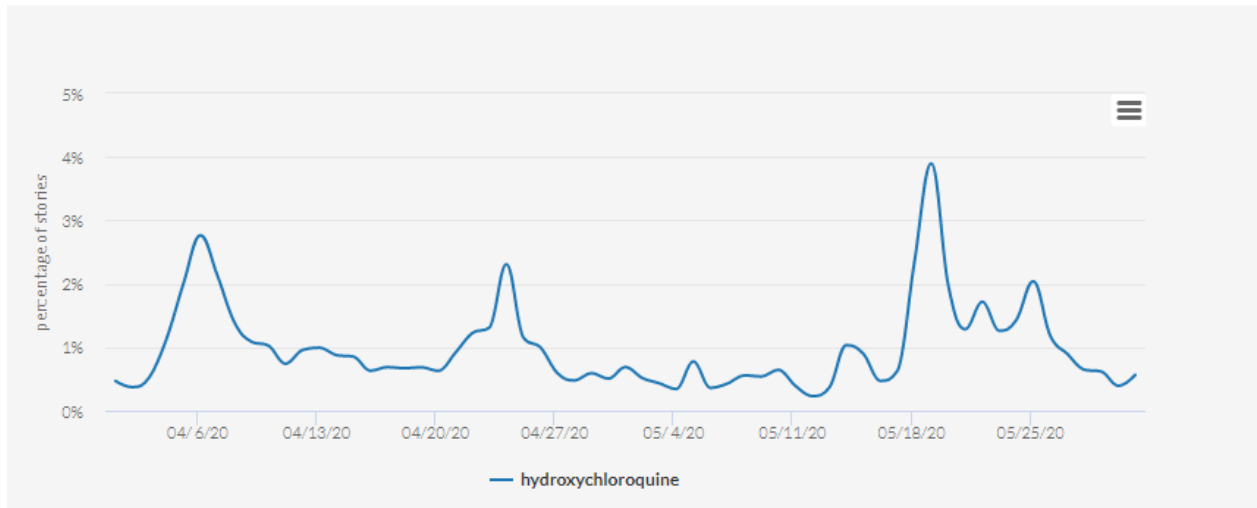


Image 2: Data gathered via MediaCloud on mentions of hydroxychloroquine in the top US media outlets.

Image 2 shows the media mentions of hydroxychloroquine via various news outlets and publications from the United States. From April 5<sup>th</sup> -7<sup>th</sup> hydroxychloroquine increased in U.S. media coverage by 2%. March 19<sup>th</sup> reflects a US media coverage of 3%. From this data a word cloud of the most frequently used words in media can be seen in Image 3. LIME, from April 1<sup>st</sup> to March 31, 2020, catalogued a total of six hundred seventy-seven publications specifically centered on hydroxychloroquine. From the LRC dataset of publications, we generated a separate world cloud to compare.

hydroxychloroquine trump drug president  
 covid coronavirus prevent study treatment treat effects  
 patients donald warned monday medical risk house hospital  
 doctors health reporters news trial clinical people white claimed  
 administration week chloroquine malaria evidence potential heart fox day  
 research tested fda benefit tuesday physician new disease dr death problems  
 announcement virus told including setting called unproven pelosi found april food  
 promoting anti-malaria veterans outside mcenany anti-malarial public press measure dangerous  
 azithromycin positive infection care york serious prescribed month medicine workers touted rhythm  
 government american support joe cuomo conley time so pandemic help following experts cure university  
 outweighed lupus discussions defended daily

Image 3: Word cloud of most used words in media between April-May 2020 via MediaCloud.

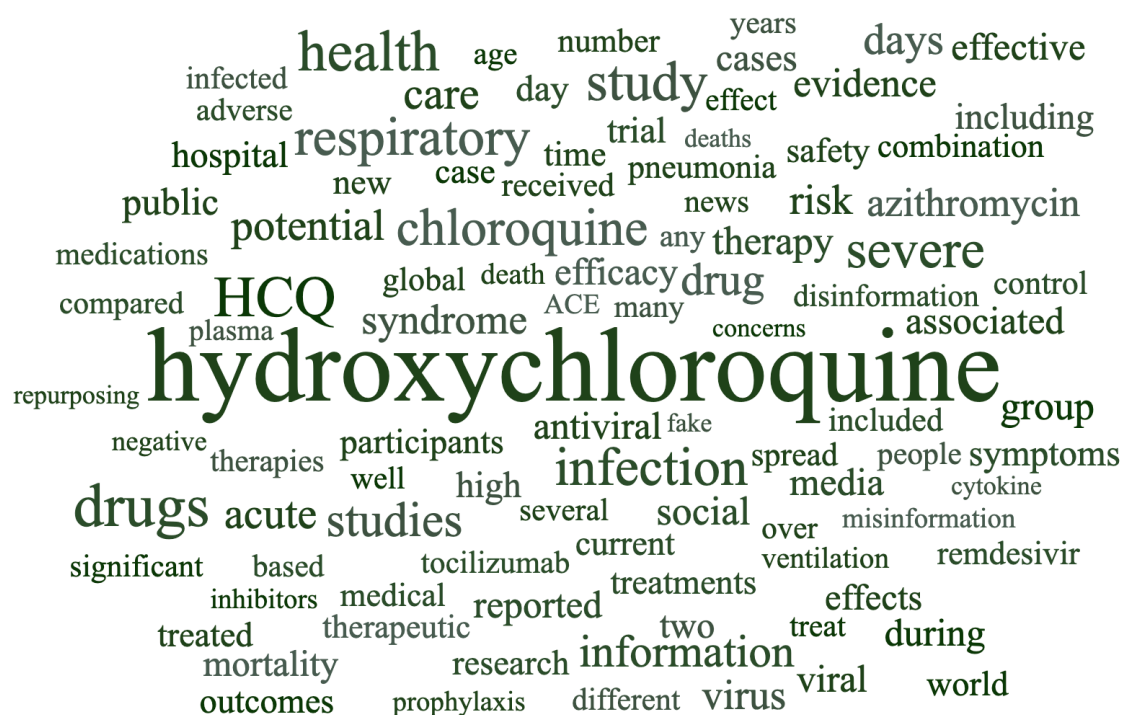


Image 4: Word cloud generated from the LRC database of literature reviewed from April 1st to May 31<sup>st</sup> centered on hydroxychloroquine.

### Open Access should be a global goal

Another observation made was truly how beneficial and life changing global open access is. One could argue that everyone benefits from tearing down paywalls. In the COVID-19 pandemic, scientific discoveries were discovered faster, regulations for patient care were updated faster, and the public had direct access to the materials that are being widely referenced by both the medical community and the media. If a standard like global open access were to stay in place from henceforth everyone would be on equal ground and science would continue to excel. Even for librarians, this has been such a beneficial gift as it would allow library systems to accomplish more for their patrons without having to allocate hundreds of thousands of dollars to journal subscriptions.

Academic journals, local and global news organizations, and even some magazines dropped the paywall for their material so that all would have access to any sort of literature on COVID-19. Correlation does not equal causation but the speed in which the medical and research community were able to communicate with each other and the public, directly benefitted from global open access of materials. As librarians, we are tasked with keeping our clinical staff recent on health-related information. Pay walls are very often a source of confusion and disappointment with the clinical staff. Removing this barrier allowed the librarians to deliver exactly what was needed, to who needed it, instantly and without fees.

Paywalls are controversial. There is no way around that statement. " ...paywalls exacerbate the already substantial inequalities in scholarly resources between the global north and global south, and raise challenging ethical questions about a for-profit approach to knowledge acquisition" (Suzanne Day, 2020). Additionally, paywalls are a method of gatekeeping and prevent not only low income students from access to knowledge, but the public's access to news as well. Already, prominent media organizations, like the New York Times, are pushing their COVID-19 reporting back behind the wall. And with Google receiving more than one billion health related search questions a day (Dress, 2019) an effective way to prevent the spread of disinformation and promote global health equity would be the abolition of paywalls as demonstrated in the COVID-19 pandemic.

### What now?

Anytime I encounter this question, I always give the same response- that is for the future to decide. LIME is still active within the LRC and collaborating with the WHO. LIME's volunteers list continues to grow, bringing in new librarians from all over the world. Leading LIME has been one of the most interesting and rewarding things I continue to do.

One thing I think has become evidently clear, from now, is that librarians need to stop being side characters in their own stories. Speak up and ask lots of questions, use your skills to adapt to any situation. Maybe this is an overly idealistic point of view. But seeing as how we have been and continue to live through history, and this history is full of grief and sadness, allow me this moment to feel optimistic. The key to LIME has been collaboration, open communication, and a sublime group of volunteers from all over the planet. Look at what we can accomplish when we all work together.

### References

- Breed, L., & [@LondonBreed]. (2020, March 11). This morning we announced that the Health Officer of San Francisco is issuing an order prohibiting all large group events of 1,000 or more persons, effective immediately. [Tweet]. *Twitter*. Retrieved from <https://twitter.com/LondonBreed/status/1237792980972392451?s=20>
- Bynum, R. (2020, March 11). *Chicago, other cities, cancel St. Patrick's Day parades*. Retrieved from PBS: <https://www.pbs.org/newshour/health/chicago-other-cities-cancel-st-patricks-day-parades>
- Dress, J. (2019, March 11). *Beckers Health IT*. Retrieved from Google receives more than 1 billion health questions every day: <https://www.beckershospitalreview.com/healthcare-information-technology/google-receives-more-than-1-billion-health-questions-every-day.html>



- ESPN News Services. (2020, March 11). *NBA suspends season until further notice after player tests positive for the coronavirus*. Retrieved from ESPN: [https://www.espn.com/nba/story/\\_/id/28887560/nba-suspends-season-further-notice-player-tests-positive-coronavirus](https://www.espn.com/nba/story/_/id/28887560/nba-suspends-season-further-notice-player-tests-positive-coronavirus)
- Ghebreyesus, T. A. (2020, March 11). WHO Director-General's opening remarks at the media briefing on COVID-19 - 11 March 2020.
- Google. (2021). *Google Trends*. Retrieved from Google: <https://trends.google.com/trends/explore?date=2019-11-01%202021-04-23&geo=US&q=Hydroxychloroquine>
- Hanks, T., & [@tomhanks]. (2020, March 11). *Hello, folks. Rita and I are down here in Australia. We felt a bit tired, like we had colds, and some body aches. Rita had some chills that came and went. Slight fevers too. To play things right, as is needed in the world right now, we were tested for the*. Retrieved from <https://twitter.com/tomhanks/status/1237909897020207104?s=20>
- Hope, L. (n.d.). *Saint Jerome: The Perils of a Bible Translator*. Retrieved from Saint Mary's Press: <https://www.smp.org/resourcecenter/resource/2637/>
- House Committee on Oversight and Reform. (2020, March 12). *Fauci Testifies Coronavirus Testing System "Not Really Geared to What We Need Right Now" [Press Release]*. Retrieved from House Committee on Oversight and Reform: <https://oversight.house.gov/news/press-releases/fauci-testifies-coronavirus-testing-system-not-really-geared-to-what-we-need>
- Kamenetz, A. (2020, March 9). *A Growing Number Of U.S. Colleges Cancel Classes Amid Coronavirus Fears*. Retrieved from NPR: <https://www.npr.org/2020/03/09/813750481/more-than-20-colleges-cancel-in-person-classes-in-response-to-coronavirus>
- Librarian Reserve Corps. (2021, May 17). *Our Mission*. Retrieved from Librarian Reserve Corps - a WHO/GOARN partner: <https://librarianreservecorps.libguides.com/home#s-lg-box-23752827>
- Mascaro, L., Taylor, A., Colvin, J., & Miller, Z. (2020, March 11). *Trump Bans Foreign Travelers From Europe, Except UK, Over Coronavirus*. Retrieved from NBC Boston: <https://www.nbcboston.com/news/coronavirus/trump-coronavirus-economy-health-white-house-address/2089459/>
- Murakami, K. (2020, March 8). *\$40 Billion for College*. Retrieved from Inside Higher ED: <https://www.insidehighered.com/news/2021/03/08/senate-approves-40-billion-colleges>
- NCAA. (2020, March 12). *NCAA cancels remaining 2020 winter and spring championships*. Retrieved from NCAA: <https://www.ncaa.com/news/basketball->

men/article/2020-03-12/ncaa-cancels-remaining-2020-winter-and-spring-championships

O'Sullivan, J. (2020, March 10). *Gov. Inslee to restrict gatherings of more than 250 people, a move aimed at sports and concerts*. Retrieved from The Seattle Times: <https://www.seattletimes.com/seattle-news/politics/gov-inslee-to-restrict-gatherings-of-more-than-250-people-including-sports-and-concerts/>

Suzanne Day, S. R. (2020, Feb). Open to the public: paywalls and the. *Research Involvement and Engagement*, 6(8), . doi:10.1186/s40900-020-0182-y

Warriors. (2020, March 11). *Warriors Statement on Chase Center Events*. Retrieved from NBA: <https://www.nba.com/warriors/news/statement-chase-center-events-20200311>

World Health Organization. (n.d.). *World Health Organization*. Retrieved from GOARN: <https://extranet.who.int/goarn/>

## Appendix 1

