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Public Library Response to COVID: Part 2

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This is the second of a 2-part series about the changes that have taken place in how public libraries adapted to COVID-19. Part 1 focused on what libraries were doing prior to pandemic, the challenges that they faced due to COVID-19, and how they pivoted to a "new normal". Part 2 focuses on innovations in programming and professional development that have helped to strengthen the library profession during the pandemic.

1. OVERVIEW

Libraries are Trusted Community Information Centers.
Public libraries consistently rank as one of the most trusted sources of information in a community (Pew Research Center, 2016). Due to this trust (see Figure 1), libraries were in a unique position to aid other government and quasi-governmental agencies in providing support and community engagement during the pandemic. They were even ranked higher than Healthcare providers and about eight-in-ten adults (78%) feel that public libraries help them find

information that is trustworthy and reliable and 76% say libraries help them learn new things (Geiger, 2017).

Libraries have always supported the most vulnerable populations to access resources, but many library staff were shocked by how many people the pandemic put in that category that weren't able to obtain the support they needed elsewhere. Library staff are now doing their normal library duties virtually, on top of serving as intermediaries for overworked social service agencies. One librarian shared that their board cut all library staff time to 50%, but the staff is all working 50 to 60 hour weeks to support their patrons.

The COVID-19 pandemic has transformed libraries and their communities. Libraries have had to learn how to deliver essential assistance safely, while also pivoting their in-person programming to online delivery. As discussed in Libraries Respond to COVID: Part 1 (Vierow-Fields, et al,

Americans are not fully trusting of information from key sources. Libraries and health providers top the list

% of U.S. adults who trust information from the following sources ...

	A lot	Some	Not too much	Not at all
Local public library or librarians	40%	38%	8%	13%
Health care providers	39	44	10	6
Family or friends	24	58	12	6
Local news organizations	18	54	16	12
Government sources	18	43	19	20
National news organizations	17	48	18	16
Financial institutions	14	54	17	14
Social media, such as Facebook, Twitter or Instagram*	3	31	37	28
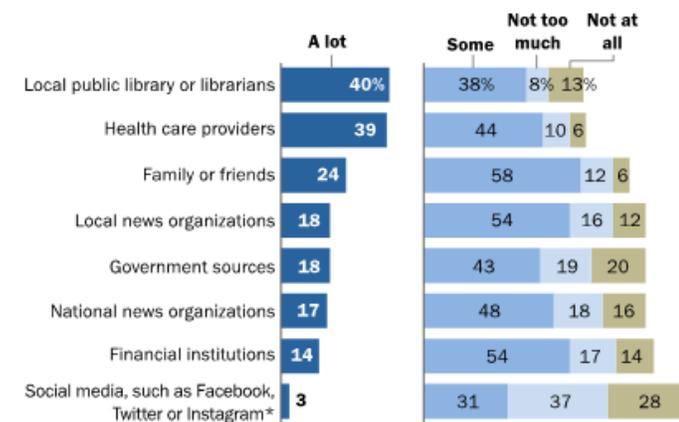
*Among social media users
Source: Survey conducted Sept. 29-Nov. 6, 2016.
"How People Approach Facts and Information"

PEW RESEARCH CENTER

Figure 1. Credit: Pew Research Center.

2020), the beginning of the pandemic impacted library operations severely between furloughs, closings, and the need to engage with at-risk communities in a safe and healthy way. These changes will likely have impacts far beyond the period when COVID-19 is a threat, resulting in libraries and other organizations achieving some sort of new normal.

STAR Library Network (STAR Net). While library staff were struggling to manage the COVID-19 crisis (adhering to social distancing, developing mask rules, and other protective measures), STAR Net was able to shoulder some of the burden by providing training on conducting virtual programs, and access to groups such as the Solar System Ambassadors to provide programs, giving a much needed break to overworked programming staff. STAR Net helps library professionals facilitate STEAM programs for their patrons by providing "science-technology activities and resources" (STAR) and training to use those resources. Over the past decade, STAR Net has been a leader in supporting libraries in developing effective STEAM programs, through both NSF and NASA-funded projects such as STAR Net Phase 2, Project BUILD, and NASA@ My Library 1.0. Over 8,000 library and STEM professionals have joined STAR Net's community of practice (CoP) to access webinar trainings, monthly newsletters, professional blogs, partnership opportunities, facilitation guides, and to take advantage of its STEM Activity Clearinghouse resources.

This paper will highlight the ways that STAR Net and its partners assisted library staff in strengthening their pro-

fession through professional development and networking opportunities, community outreach efforts, and virtual programs that libraries hosted for their patrons.

2. STRENGTHENING THE LIBRARY PROFESSION

Professional Development. Library staff were eager to learn how to provide effective programs during this period of great disruption, especially ones that could be delivered online. No one person or institution had all the answers. There was a flurry of experimenting with different software platforms and different types of content throughout the Spring and Summer of 2020. The change to virtual programming highlighted an area where a vast majority of libraries were underprepared. As described in Part 1 (Vierow-Fields, et al., 2020), prior to COVID, virtual programs were a one-off, usually reserved for a high-profile event. During the pandemic, 80-100% of programs shifted online, and staff were unfamiliar with how to engage, host, or troubleshoot technical issues around this new normal. The need for library staff to connect with colleagues online and learn about how other libraries were innovating was highlighted by greatly increased participation numbers in STAR Net's Webinar Series and online attendance in library conferences, both national and state-level (e.g., American Library Association, Colorado Association of Libraries).

An example of a highly attended webinar was Virtual Programs 101, a "behind the scenes" look into how STAR Net facilitates virtual programs. "*While nothing can replace a face-to-face interaction, virtual programs can open up new opportunities for learners that may not have access to the library's in-person resources. They can also allow your library staff to still engage with regular patrons during the COVID-19 crisis*" (STAR Net Webinar). During this webinar, professional development staff facilitated an open and honest conversation about how to consider audience needs for webinars and choose a platform that is right for them. Also discussed was managing inevitable technical problems and creating a warm, welcoming environment where people feel comfortable learning.

Figure 2: STAR Net staff hosting the webinar Virtual Programs 101 Credit: NCIL/SSI.

The webinar also promoted rich conversations between library staff, an important networking and support opportunity. As one library staff member said at the beginning of the webinar, "I'm a newbie to virtual programs! Need Help!" They did not need to look any further, for other library staff provided information on their plans, what they had done previously, and even links to upcoming events for others to reference. "We try to incorporate physical elements to our virtual programs, recipes that people can follow, crafts with supplies people are likely to have at home," one staff member noted. "Our summer challenge we are doing take and make crafts for teens with videos for teens to watch as well as printed instructions for people who don't have tech access." As of the printing of this article, the webinar has been viewed 274 times, validating the need for libraries to have access to how-to videos around virtual programming. Other webinar topics included at-home activities, take & make kits for the CSLP summer reading theme, Mars Perseverance launch, and GLOBE Observer programs.

Engaging the Whole Community. Libraries are essential community organizations that reach underrepresented and marginalized populations (Vierow-Fields, et al, 2020). With funding through city and county budgets, they provide access to resources that benefit their whole community. They have evolved from repositories of information to vibrant hubs of community engagement, becoming needed and essential institutions. One important factor in this evolution is the ability to engage community leaders and organizations. *STAR Net* developed and tested a framework to help libraries build effective partnerships called *Community Dialogues* (Holland & Dusenbery, 2018). These in-person events allow public libraries to bring stakeholders together to discuss relevant issues such as STEM programming needs, community action for climate change, and ways for reaching new refugee populations. They are an effective gateway for community organizations to identify shared goals and work together to solve pressing community needs. Who do you want to talk to? We liked one library's suggestion, borrowed from Mr. Rogers: "look for the helpers", the people doing good during these challenging times. For more information about Community Dialogues go to https://www.starnetlibraries.org/resources/community-dialogues/.

Community Dialogues go Virtual. More than 200 libraries have conducted Community Dialogues, and many have chosen to continue them virtually during the pandemic. Topics addressed in virtual Dialogues include bridging the Digital Divide, supporting classroom teachers in remote learning, and working with social service agencies to determine how libraries could support their work. Libraries have used a variety of tools to host these conversations

(i.e., Zoom, Facebook Live, WebEx, and even Twitch!). A handful of libraries have hosted virtual Dialogues in partnership with their local museum or zoo, in order to assist these venues in getting their virtual programs out to new audiences. The ideal Dialogue doesn't benefit just one stakeholder, it identifies the intersection of needs and skills among multiple community organizations, streamlining processes and accelerating goal attainment. This is especially vital during the pandemic, when government agencies and nonprofits are extra busy, losing funding, and struggling to connect with populations most in need. In our fast-paced virtual age the value and power of conversation and networking is sometimes forgotten, but this is the perfect time to break out the figurative rolodex to get to know your neighbor and build relationships that will last far beyond the current situation.

Social Hour Events. Part of *STAR Net's* approach to assisting libraries in the beginning of pandemic was to provide an opportunity to connect through virtual Social Hours and Check-in Calls. The purpose of these calls included learning about the impacts of COVID-19 in different communities, how STAR Net could assist libraries in continuing their community work, and an opportunity for library staff to ask questions of each other. They also helped the STAR Net team find ways to pivot to better serve library needs in the pandemic, such as the webinar mentioned previously.
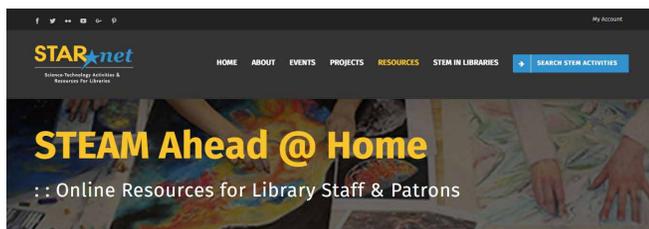
Social Hours hosted in April and May 2020 were open to all 8,000 members of the *STAR Net* community. These calls, while kept to only 25-30 participants for greater interaction and connection, provided staff with the chance to ask each other how they were coping, what their library's status was, and how they could impact their communities now that everything was shut down. Library staff shared virtual programming ideas, partners to reach out to, or innovative ways to reach a new audience. These techniques created an opportunity for library staff to expand their resources and serve their communities in new ways (e.g., recorded Storytime, partnerships with a local Free Little Library, and an online Astro Camp).

Figure 3: NASA@ My Library Community Dialogues for Our Planet: EARTH Webinar. Credit: NCIL/SSI.

3. LIBRARIES ADAPT TO COVID-19

STEAM Ahead and ***STEM Activity Clearinghouse Resources.*** *STEAM Ahead @ Home* was an opportunity to consolidate resources into one area for libraries to access. Created as a webpage on the *STAR Net* website, *STEAM Ahead* was divided into four separate areas: 1) Ready to share activities with patrons, 2) Virtual program ideas, 3) Professional development resources to strengthen library staffs' skills, and 4) the NASA @ Home website and its extensive collection of resources. Four Wiki pages were developed to help library staff build their professional community. They could ask questions about curbside checkouts or Take and Make activities, develop new partnerships, learn about safe opening procedures, or how to implement safety guidelines. They could also interact through a private Facebook group where ideas, resources, and activities were posted. In addition, a specialized collection on *STAR Net's STEM Activity Clearinghouse* was created to specifically highlight activities that could be converted to Take and Make kits.

*Figure 4: STEAM Ahead@ Home Main page.
Credit: NCIL/SSI.*

Take and Make Kits. As well as providing home-based activities through curbside or door-to-door delivery, many libraries also began to distribute Take and Make activity kits for patrons to do at home. These have included hands-on STEM activities, painting pottery, adult coloring books, build-your-own escape rooms, stomp rockets, and even citizen science projects to locate and destroy mosquito habitats.

Figure 5: Take and Make promotion flyer. Credit: Wicomico Public LibraryCredit: NCIL/SSI.

STAR Net provided over 23,000 Take and Make kits to 600+ public libraries. Innovative distribution models included the expected curbside pickup model to the very unexpected grocery store approach, where boxes of kits were placed at checkout stands. Libraries distributed Take and Make kits through WIC offices, school lunch programs, food banks, doctors' offices, and Little Free Libraries.

Digital Divide Challenges. The Digital Divide is the lack of internet access in homes and/or the lack of computer access. Predominately seen in lower income, marginalized, and rural communities, the lack of internet access has many negative consequences in education, income disparities, and healthcare. Bridging these gaps are essential aspects of social inclusion for just, fair, and equitable access to resources and opportunities to achieve a higher quality of life and well-being (van Deursen & van Dijk, 2014).

Before the pandemic, libraries addressed internet disparities through the development of computer labs, free internet access inside their buildings, and staff who provided tech assistance. 81% of libraries in the PLA Survey were already leaving their internet on after hours for patrons to access in the parking lot (PLA, 2020). During the pandemic, libraries shifted their routers to the front of their buildings, extending the range further into their parking lots for patrons to access and some even created a mobile hotspot capability using vans. Public libraries received grants to purchase Wi-Fi hotspot devices that were then put into circulation for patrons to check out. With many school districts going virtual in the spring and fall semesters,

PROVIDING PUBLIC INTERNET ACCESS

LEAVING ON PUBLIC WIFI WHEN THE BUILDING IS CLOSED TO THE PUBLIC

81% of libraries offered this as a service prior to COVID-19 and continue to do so during this time

12% of libraries expanded or added this service in response to COVID-19

LOCATING WIFI ACCESS POINTS TO IMPROVE ACCESS OUTSIDE OF THE BUILDING

36% of libraries offered this as a service prior to COVID-19 and continue to do so during this time

8% of libraries expanded or added this service in response to COVID-19

CHECKING OUT HOTSPOTS

21% of libraries offered this as a service prior to COVID-19 and continue to do so during this time

2% of libraries expanded or added this service in response to COVID-19

Because data are rounded and the lowest response categories are removed, data may not sum to 100%.

Fig. 6. Public Library Association survey. Credit: Public Library Association.

Figure 8: NASA Solar System Ambassador Kevin Gallagher gives a presentation on Mars for Normal Public Library. Credit: Normal.

hotspots allowed those with no internet access the ability to stay active in school.

Libraries also adjusted the way they host Storytime programs, one of their most popular programs. While some were doing Storytime over Zoom, or sending links to pre-recorded videos, others went to a blast from the past and offered a "Call In" Storytime where the program took place through the telephone or (like those in Alaska), over the radio. Since the development of smartphones, those suffering from the digital divide are more likely to have a cellphone in their possession than a computer or tablet (van Deursen & van Dijk, 2014). This development in technology can help engage those who lack reliable internet access.

Figure 7: Storytime promotion. Credit: Alamosa Public Library, Alamosa, CO.

Virtual Library Programs Featuring Scientists. Even before COVID-19, STAR Net's NASA@ My Library project developed virtual program experiences for public libraries that featured NASA scientists (Johnson et al, 2019). Face-to-face conversations in an informal learning environment pro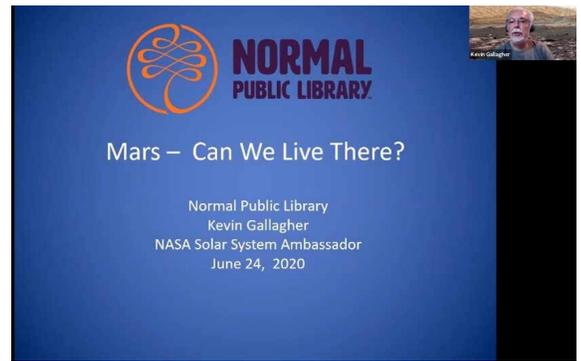vide scientists with a valuable opportunity to engage public audiences. However, in-person connections between scientists and public audiences are not always feasible. Scientists often live near research institutions in urban areas, while a large segment of the U.S. population lives in more rural locations, like many NASA@ My Library partners. In 2018, Pacific Science Center implemented a pilot to test one approach to virtual programming by developing and hosting programs featuring a virtual connection between a scientist and patrons at geographically remote public libraries. This approach is built upon the Portal to the Public model (Storksdieck et al., 2017).

Figure 9: A library staff member demonstrates comet making during a LPI virtual program. Credit: Lunar and Planetary Institute.

In 2020, the Lunar and Planetary Institute (LPI) prepared nine NASA-funded scientists to conduct virtual programs with selected NASA@ My Library partners. LPI worked with the scientists to identify a demonstration or activity that would relate to their research and which could be conducted virtually. LPI then prepared the scientists to collaborate with the libraries to deliver a memorable experience for patrons; this preparation was conducted entirely virtual. Activities were revised as needed to ensure they could be used to engage patrons virtually. LPI also prepared each

library in advance, on their role in facilitating discussion and the activity, and reinforcing the program's goals and techniques for engaging patrons at home. Aspects of the Portal to the Public model were incorporated into all virtual trainings, such as questioning strategies, creating personal connections with patrons, and creating an atmosphere that invites participation. All scientists and library staff also received preparation on technical aspects, such as the use of cameras and microphones and practice with the platform used for the virtual programs. As one library staff member noted after their program, "I loved [the scientist's] presentation and her responses to questions. She did a great job of showing how scientists research Mars, and how young people can prepare themselves to become explorers in the future."

Streaming Science Events. Many libraries are relying on partners to host virtual events and programs and have found great success in planning these programs around high visibility science events. The American Museum of Natural History (AMNH), in partnership with STAR Net, hosted three virtual, live-streaming events over the summer specifically for library audiences. The first event, "My Trip to Mars" promoted the launch of the Mars Perseverance rover and featured a virtual fly-over of Mars using OpenSpace software. Many libraries hosted Mars scientists, distributed Mars-themed Take and Make Kits, or read Mars books for story-time in conjunction with this livestream. The second event titled "Sky Stories" focused on the various tales cultures have told of the stars and planets in the night sky. Libraries invited native speakers, hosted constellation contests, and ran virtual star parties in support of this event. The third livestream coincided with Earth Science Week and was titled "Our Planet: EARTH". 14,000 library patrons at more than 250 libraries received earth science Take and Make activities courtesy of STAR Net, and other libraries hosted citizen science events through GLOBE Observer. These AMNH events provided library staff with the scaffolding to create other relevant programs with national and local partners.

Figure 10: Mars Astrobiologist Kennda Lynch explains why NASA picks certain areas for rovers to explore. Credit: AMNH.

Dream, Build, Create Event. Through the NSF-funded Project BUILD program, the American Society of Civil Engineers (ASCE), in partnership with *STAR Net*, offered the award-winning documentary, Dream Big: Engineering Our World, to libraries free on four specific dates in November 2020. Dream Big was created with the express purpose of increasing interest in engineering as a profession (Finton et al., 2021).

Figure 11: Documentary Poster for Dream Big: Engineering our World. Credit: ASCE.

In addition to the film, 6 panels of young engineers (Dream Teams) were chosen by ASCE staff and members, members of the Society of Hispanic Professional Engineers, and faculty/alumni networks from Historically Black Colleges and Universities. Panelists were selected because they possessed expertise in the topic, had an engaging personality, and to ensure diversity across all Dream Teams. Although the topics varied, each Dream Team had a similar format. Engineers talked about what led them to engineering, what they love about their work, and how engineering involves creativity and problem solving.

During each Dream Team one or more of the panelists modeled a Project BUILD style engineering activity, showing how it can be done at home. Project BUILD activities were technology-rich STEM learning experiences fundamental to the Engineering Design Process. Activities

Figure 12: One of the Dream Team Panels. Credit: ASCE.

were developed to help participating youth: 1) Solve challenge-focused (real or simulated) problems using an engineering design process and 2) Use age-appropriate technology to model how engineers build a better world and improve the local community (Finton et al., 2021).

The *Dream, Build, Create* event provided a valuable opportunity to connect viewers with diverse engineers. One library staff member felt, "People respond very positively to something like this simply being available in the community -- it changes their perception of what kind of town we are and what opportunities are out there for their kids."

The combination of the film and panels highlighted the variety of activities that engineers do, including that they are creative problem solvers and help make the world better. It also showcased diversity in the engineering profession, providing an inspiring and eye-opening opportunity for youth so that they could see future possibilities that they may not have previously known about or considered. This was especially important for participants from groups traditionally underrepresented in STEM who may not have previously seen people who look like them in the engineering profession. Additionally, rural communities, which made up a large percentage of program registrants, benefited from access to engineers that are less likely to be located in their local communities.

4.LOOKING AHEAD
It is far from certain when public libraries, or our planet as a whole, will return to "normal". It is likely that libraries will soon begin to offer in-person programming, though patrons will need assurances that the library is taking care of their safety and health concerns. Even after a vaccine is widely distributed, change will likely be slow. Challenges, such as digital divide inequalities, will need to be addressed locally as well as nationally. Libraries will also be facing the need to help children "catch up" with their schoolwork. This will require a greater need for strong partnerships between public libraries and K-12 schools. But not all changes were negative.

State library conferences have reported increased participation in a virtual world by rural and remote library staff who normally couldn't afford a trip. Autistic patrons who couldn't participate in loud and raucous in-person programming have found control in a virtual environment. And community organizations have found new partners and supporters while adapting to a new normal. The COVID-19 pandemic made it abundantly clear that informal learning institutions (ILIs) cannot exist in an institutional vacuum. They need to collaborate and chart a path forward that not only benefits them but *includes* the communities and audiences they serve. There are cross-sector models where

community partnerships between libraries and science museums have been established and are successful (e.g. Ithaca, NY; Columbus, OH; and Seattle, WA). Now is the time for a nationwide movement that does more than addressing specific institutional needs but instead builds bridges between key community organizations, to make a real long-term difference to the health and vitality of all communities, large and small, across the country.

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On the cover:

Architect and engineer Don Victoriano Arizapana Huallhua crossing his community's woven bridge (Q'eswachaka} in Peru. Learn more about engaging Latinx audiences through the cultural roots of STEM on page 3.