»» Lawrence Smith: Good afternoon everyone. Thank you for joining us. I am Lawrence Smith, executive Vice President and physician in chief at Northwell Health and Dean of the Donald and Barbara Zucker School of Medicine at Hofstra Northwell. I also Chair the Roundtable on Health Literacy at the National Academies of Sciences, Engineering and Medicine. I welcome you to today's webinar addressing COVID-19 misinformation through health literacy practices. This webinar will explore the rise in health misinformation with COVID-19 as an example and a potential for health literacy strategies to be used as tools for addressing health misinformation. This webinar hosted by the Roundtable comprises health literacy experts from healthcare, former, community based organizations and other fields, pharma, we convene meetings to share promising and best practices cutting edge research on health literacy around a specific topic of issue. Some housekeeping this webinar is being recorded and will be archived at the Roundtable website National Academies.org/healthliteracyRT. I would now like to introduce the moderator. We're fortunate to have Ruth Parker and Laurie Myers as moderators of this discussion. Ruth Parker is a Professor of Medicine Pediatrics and Public Health at Emory University. For over two decades she has partnered with patients to better align healthcare demands, complexities and information with the skills and abilities of everyone who needs/29/20 Misinfo to know and understand how to get and use what they need for their health.. She is recognized for research, education and health policy efforts to advance health literacy and views the lens of health literacy as foundational to understanding and promoting patient centered research and care. She has co-authored the test of functional health literacy in adults and the definition of health literacy used by healthy people 2010, 2020, the IOM and the NIH. She's a former member of the Roundtable on Health literacy.

Laurie Meyers is the Global Health Literacy Director for Merck. She leads the company's health literacy efforts in supportive improved patient's communications about clinical trials, medication, disease education and packaging. She is passionate about diversity and inclusion, passionate about diversity and inclusion and literacy is a tool to address healthcare disparities. She advocates for policy change to make it easy for patients and their families to understand information about clinical trials and medication.

Laurie earned a IHI Health Literacy Health Research Award for her effort to include people with low health literacy in market research and confirm the understanding. She was named a 2018 marketing and media healthcare transformer. She is a member of the Roundtable on health literacy. I will turn the meeting over to Ruth who will be moderating the discussions with our first two panelists. Ruth?

»» Ruth Parker: Thank you, Larry. Thank you to the Roundtable members. And to Rose and Alexis who organized this webinar. I'm going to start my video. Sorry about that guys. I had to reread a slide there about starting the video, apologize. Anyway, thank you, Larry and thank the Roundtable members and Rose and Alexis for organizing this webinar on such an important and a timely topic. I'm delighted to be a part of this and I welcome those who joined us for what I expect will be a very good session. As a reminder we do encourage you to submit questions using the Q&A function. Though I can't promise that we'll get to answer all of them during our discussion. We did have a couple of hundred questions submitted during the registration

period. And we worked with our panelists to incorporate some of those into what you'll hear presented and discussed with them during the session. I know members of the Roundtable as well as many others committed to health literacy know and value the fundamental importance of trusted sources and content of essential health information. Indeed, health literacy relies on and must have at its foundation up to date evidence that's communicated across various media so that everyone can find it, understand it, and use it for their individual and community's health. We also note that it is both an art and a science to clearly communicate uncertainty. What we do know, and what we do not know. Misinformation and disinformation are growing real world challenges. And we see their relevance to how we navigate this current pandemic. It really is an honor to be here with some terrific panelists who are going to try to help us understand this. And also offer us their insights into what those committed to health literacy can do to help us through some pressing challenging times right now.

Our first panelist is Kate Starbird, and we're going to -- Kate Starbird we'll ask her to help frame the conversation and explain to us a bit more about misinformation. Kate Starbird is an associate professor in the Department of Human centered design and engineering and Director of The emerging capacities of mass participation laboratory. She's also adjunct familiarity in the Paul G Allen School of Computer science and engineering and the information school and a data science fellow at the E-science institute. Kate's research is search waited within human-computer interaction and the emerging field of crises informatics or the study of how information communication technologies are used during crises events. Her research examines how people use social media to seek, care and make sense of information after natural disasters and man-made disasters. More recently her work has shifted to focus on the spread of disinformation in this context.

Kate's research touches on broader questions about the intersection of technology and society, including the vast potential for online social platforms to empower people to work together to solve problems as well as salient concerns related to abuse, and manipulation of and through these platforms and the subsequent erosion of trust in information. Cons went erosion of trust. I would like you to help us understand a bit more about the difference between misinformation about disinformation and how we should see and understand these.

»» Kate Starbird: Especially in the context of crises events we see a lot of different kinds of information, accidental rumor, we see misinformation. We're increasingly seeing what we're talking about as "disinformation" and the difference between misinformation and disinformation is really important when we think about strategies for addressing false information, online and other places. And for just understanding it. And so misinformation, the way we're thinking about it, and these definitions are actually in -- they're being contested, we're still working it out as a sort of emerging field of studies of disinformation. But the differences as we're explaining them now are that misinformation is false information but not necessarily intentionally false information. And disinformation is false or misleading information that is spread, that is seeded or spread for some kind of intent, usually a political internet, or sort of political objective or a reputational objective or financial objective.

»» Ruth Parker: So in other words, we should think of disinformation as not just simply false information, but move beyond to think about the intent of what was there.

»» Kate Starbird: Yes. Indeed. And as we do that, we have to think about sort of, not just looking at the content of an individual piece of information, but look at disinformation isn't just one piece of information, it's also part of the campaign or a set of different narratives or different things. And it often builds on factual or plausible core and sort of layers false information around that or takes it out of context to spread it. So it's not as simple as saying that piece of information is true or false. It's actually why is that information spreading now? Who's spreading it? And what are the intentions of spreading it in this context or that context? It really makes the challenge of identifying false information and removing sort of malicious information much different than just this kind of fact checking of something being true versus something being false.

»» Ruth Parker: Big important distinction. Thank you. So how do we become aware of misinformation and disinformation.

»» Kate Starbird: One of the things I like to say here is that misinformation doesn't spread itself. We spread it. "we" being everybody who participates in these information spaces nowadays. And we -- as humans are particularly vulnerable to spreading misinformation during crises events like pandemics due to the uncertainty of the information space and the anxiety that we feel about what we should do about it, how it affects us, et cetera. So misinformation and disinformation sort of leverage that emotional response of anxiety, or fear, or outrage to get us to make that decision to share it on. And so, my brother called me early in the pandemic period to tell me that this lockdown was coming, I needed to go to the grocery store right away. And my brother rarely calls me. (Laughter) to talk about information, we talk other ways. But he was feeling anxiety, he was feeling anxiety for me, he passed what turned out to be false rumors to me, these emotional engagements become part of our vulnerability to sharing misinformation/disinformation. Particularly nowadays our sort of political outrage gets kind of invoked as part of these online discussions and kind of, pushes, motivates people to push that reshare button or that retweet button, that's part of why this information goes viral.

»» Ruth Parker: Kate, we had a lot of people who sort of asked about in their questions during the registration about you know, red flags, or whatever. How do I know? So what you're really underscoring is we need to take note of how we feel.

»» Kate Starbird: Yeah. So the history for media literacy has often been concentrated on sort of logically looking at the information and okay, where is the source? Who's the source? All these different things, but the way we think about when we're being manipulated, it's not coming from up here, it's coming through our guts. We're being manipulated through our emotion to share this information. One of the things we tell our students and others is to really tune into your emotional response when you're seeing a piece of information. And not that you have to say oh, because I'm emotional I can't share it. If you feel outrage you should share it. But reflect upon that emotion, why you're feeling that, why that information might want you to feel that and think about that, maybe slow down a little bit before you reshare something or pass something along.

»» Ruth Parker: So I've heard you speak before. Could you share a little bit about your thoughts about science and it's evolution and uncertainty and how that really plays into what we're seeing right now with COVID and the pandemic and misinformation?

»» Kate Starbird: Yeah, from the literature sort of crises informatics back to social psychology of rumor during crises events, we've had these theories or understandings that one of the reasons we often see misinformation and rumoring and false rumors during crises events has to do with the uncertainty of what's going on. Like we're not sure what the impacts are. We're not sure what actions we should take. We have a tendency to come together, try to gather information and try to make sense of it and theorize about it. Often those theories can turn out to be wrong. But sometimes they do turnout to be right. So that theorizing and collective sense making starts psychological and informational purposes during a crisis event. The thing afternoon the pandemic that we're experiencing is this uncertainty period isn't just two or three days like it sometimes is for an earthquake, we're getting months of uncertainty, it's scientific uncertainty. Things are changing underneath us. The best understandings today are very different from the best understanding of what's week or a month ago, or certainly three months ago.

Those changes, first of all the uncertainty makes us uncomfortable. But the fact that things change, we have to update our mental model around things, a lot of us aren't very good at that. And that makes us even more uncomfortable, that can play into people that might want to spread a certain kind of narrative to say look the scientists told you one thing, now they're telling you something else, they must be lying to you.

So they use, people that might want to manipulate this and spread disinformation can use the sort of natural process of updating a situation during a time of uncertainty, they actually can spread a false narrative or create a false narrative and spread it to undermine science all together and just keep that uncertainty, make it even more confusing situation. Often for some other objective like a political objective or else. We're seeing a lot of that right now.

»» Ruth Parker: I think, yeah. I think it underscores that we as humans, struggle with uncertainty, it's scary. It makes us feel a certain way. And that as a climate, if you will, right now with the novel, new, you're learning, and our ability to help everybody understand that what we know changes., evolves, and you know, which makes okay, so what do I trust? And when do I trust it? And how do I know even more of a real world challenge right now.

»» Kate Starbird: Yeah. We're experiencing something that is, you know, it's all too natural. I mean, when I first started seeing that this pandemic was happening I know the literature, I was like oh, last going to be a lot of rumors and misinformation and just because that's the natural way that we deal with these things because they make us very uncomfortable. What's unnatural is that maybe this is not unnatural, maybe it's natural as well, it's intersecting with just sort of pervasive politics that's in our information and the pervasive spread of misinformation and the use of these techniques. Not only are we naturally grappling with this stuff that will cause us to make mistakes and things. But on top of that there are folks who are willing and now very able to manipulate that anxiety and that uncertainty for their own objectives. And that is definitely making this an even more complicated situation. And perhaps at this point we can even start theorizing about how that is costing lives in the United States.

»» Ruth Parker: How are we on the ground so that the common people, how do we think about misinformation and disinformation and should I think about those differently? Should I approach them differently? Or should I -- I'm sure years of scientists and somebody who studies it probably does. But what about the rest of us?

»» Kate Starbird: I mean, it's difficult because as we think about what disinformation is, it means that we have to assess intent. And intent is a lot harder to assess than is something true or false. And even the platforms themselves have tried to develop policies about the spread struggle with that distinction. It's much easier to say I'll fact check and say whether this is true or false versus I'm going to try to assess the intent for why that particular narrative is spreading out of context right now.

And so, I think it's really important for us to understand it. But it's also really hard. And we need better tools for understanding that. And when I think about social media platforms, we need better queues from them to be able to assess intent. But we need better information about where the information we're seeing is coming from. We need better information about how it got to us. We need better queues about okay that website actually has spread these other five things, so you probably should be a little bit worried about their intentions. And so I think we're absolutely to be savvier participants in this information space, we need to be able to understand this difference between misinformation and disinformation, but we also are not -- we don't have the resources yet as users of these spaces to be able to make assessments like that. And we really do need help. And I think that's a platform design problem as much as anything else as well as an education problem. We need to better understand these things and come up with and learn strategies for addressing them.

»» Ruth Parker: What do you think the scope of this is? How big a deal is this?

»» Kate Starbird: Oh, gosh you're asking a person who studies this is all the time. It's the biggest thing in the world! It's the most important problem.

»» Ruth Parker: That's what I said about health literacy for a few decades many of you have heard me say that.

»» Kate Starbird: In 2013 we were studying rumorses during crisis events. We saw some of this disinformation happening. It was conspiracy theories that seemed to be sort of selectively amplified for political objectives. And I thought, boy that's so marginal, it's let's not even look at it. I didn't want to be the researcher that goes around studying conspiracy theory, I didn't want to be giving talks about them or seeing my email after giving talks about them. But two years later we began to recognize the rumors and misinformation, yeah those were out there after crises events, but the disinformation was becoming a bigger and bigger part of what we were seeing. And there was infrastructure, network structures, connections between accounts that habitually spread this stuff that were beginning to reshape how information moved in these information spaces. And I think increasingly we have plenty of cues to say this is a really big problem, we're seeing, you know, disinformation come out of the mouths of leaders of political leaders not just in the U.S. but all over the world and we're seeing it show up in what we would previously consider mainstream spaces.

And so I think as we see, it moves from the margins to the center of the conversations, I think we can recognize it as a pretty significant problem.

»» Ruth Parker: Yeah, I think you underscore in the work you've done that it is with disinformation, it really is a campaign, and the intent of it is very specific. I might ask you just to close, I was impressed hearing some talks I listened to that you did about how it really undermines Democratic societies. You know. That would be helpful.

»» Kate Starbird: Yeah, so one of the growing theories about disinformation and we're not sure whether it's an objective or just an outcome, so disinformation does have some connections. The techniques do have some connections to soviet active measures and intelligence operations. It's been outsourced now people all sorts of people are using disinformation. It's certainly evolving. But one of the theories about the outcomes of disinformation, is not that it just changes somebody's mind about some topic, but it increasingly sort of disrupts the social fabric by having people move apart from having a shared reality. Where people increasingly believe things that other people are like, -- that's just not my reality. And also, they begin to lose trust in information, information providers, in government, in science. That's part of the narratives that help to push disinformation as often distrust in science and others that we would have previously looked to as information authorities.

And what that does is it makes it so people can't come together on the common ground that we need as a Democratic society to come together to govern ourselves. If we can't come together around some shared reality, then democracy kind of falls apart. And on top of that we're seeing disinformation directly attack our faith in the election process, and further just kind of erode our trust in the institutions that we need as Democratic society. So, there are some theories that some days I buy into them more than other, but they're really dark about what the long-term impacts of pervasive disinformation will be on our society, which definitely make that earlier comment about it being a significant problem, it really does seem like a to potentially really damaging situation for Democratic societies.

»» Ruth Parker: Well thank you for the good work you're doing and for joining us. I think your comments about the erosion of common purpose are so incredibly important and relevant at a time when we are all very aware of that, to navigate the theory and the trials of a pandemic, we need common ground. So thank you so much nor the good work you're doing. I'm going to turn now to introduce our next speaker. And I do have the pleasure of introducing to you the next discussion who is, Nat Gyenes. Gnat leads the digital health lab focused on technologies to support more equitable and stronger health response and communication efforts. She's a research affiliate at Harvard's Berkman Klein Center, examining ways that the health information online impacts disease distribution and the ways in which machine learning approaches can be used to fact check information and strengthen public health systems. So welcome Nat, thank you very much. Apologize if I butchered your last name. I'll apologize ahead of time. Welcome.

»» Nat Gyenes: You did a great job. Thank you so much for the intro, Ruth. It's a huge pleasure to be in the company with such brilliant researchers. And I appreciate all of the participants for choosing to spend the day learning alongside all of us. As we've mentioned, I'm Nat Gyenes, I direct the digital health lack we work directly with social media platforms and search organizations the try to strength what we call "information equity on the internet." So, a specific project that I'll dive into a bit more deeply later on in this presentation is a project called the public health expert database that we've been working on. Where over the last six months, we've built a team of infectious disease experts, health literacy practitioner, epidemiologist, pandemic preventionists and vaccine adoption researchers to work directly with fact checking organizations as well as local newsrooms in order to provide on demand contextualization for the latest scientific research are related to the pandemic. You can learn more about it at learn about COVID-19.org, I'll touch on it a bit more later. But I'm going to emphasize a specific key

opportunity for the public health community to contribute to existing technology-based interventions that are working to address health equity at the scale of the internet. Next slide. So through my research that we've conducted at the digital health lab, it's become clear how important it is to ground health misinformation response work and is more generally in the reduction of stigma. I know we can't have question and answer responses directly here, but I wonder how many of you have come across health myths that have been labeled -- health myths that have been labeled as outlandish, or crazy or silly. I know that it's a difficult balancing agent to try to reduce the negative impact of health misinformation, while ensuring that we maintain a safe space for our communities to ask questions about health myths. So, I would like to sort of by leveling the playing field. I'd like to start by highlighting one health myth that I carry with me even as a scientist, as a health misinformation researcher, its information that I know to be false, but it's still embedded in some of my behaviors. And mine is about touching my nose. So, when I was growing up, I was told that if I touched my nose too much it would start to grow. So now I have some habits where I end up touching my nose, I still feel that sort of anxiety even though I know it's not true. And some of my colleagues, even ones on this panel have highlighted health myths that they know to be untrue but still carry with them. Each as eating cigar Ricky greens to boost immune systems, picking the seeds out of water melons or applying Papaya ointment to cure anything. Again these are all false. But what we start to do here is sensitize ourselves as health communicators and at the health literacy community more generally to what the impact of referring to health myths as outlandish or ridiculous might mean to those who we want to view us or our organizations as health information authorities. So I invite you to take a quick second to just think of one health myth that you might carry with you even if you know it's not true as a scientist as we continue on with this presentation. Next slide. So we're experiencing a historical moment today. The world now has more internet users than people with access to essential health service, and it's a world where over 80% of internet users search for health related topics online. Next slide.

Thank you. At the same time, clear examples of disparities in healthcare lead to grave consequences which we know are disproportionately affecting queer communities and communities of color. We know the disproportionate access to information, access here we're talking about access in the broadest sense, accounting for barriers to accessibility, language constraints, content relevance is actually important to communities, these can exacerbate the negativism pacts of the health misinformation that reaches these communities we want to target through their social media feeds or through as many of us on the call might be familiar with family text messages or through content searches online when we use particular keywords. Next slide. So where audiences search and the information that they're able to find depends on the internet availability or digital resources that they have access to. For example, if an individual only has access to the internet through Facebook's free basics program, which is a collaboration between Facebook and key mobile providers around the world, it means they can only access select information and not the World Wide Web. So it's important to consider if we're meeting health literacy needs where users can access information in the first if they're limited by language or literacy, the search queries in Google can yield results that don't align with the nuanced language that's used by the public health authorities in the community. So, today I'll be focusing on four key challenges related to effective health misinformation response.

And how they're being addressed with technology companies at the scale of the internet.
Finally I'll also talk about where the public health literacy community can create and supplement to improve health literacy and health access on the web. So I'll discuss gaps in community-level information, unmet language needs, challenges in responding to mid information or the misunderstandings or misrepresentations that we see right now through COVID-19 based on emerging scientific evidence, and community spread through our social media networks.
Next slide. So the current COVID-19 information crisis we know has only centralized the importance of effective collaborations between health authorities and actors in the technology community. These collaborations can only be strengthened by the involvement of an extremely important stakeholder which might be new to many members of this audience, in driving forward health communications in the digital information ecosystem.
Specifically in collaborating with technology actors, and these are fact checking organizations.
Next slide. Fact checking organizations have been around for awhile. They've existed since the early 2000s, many may know of them through their work in investigating political misinformation, or fact checking political claims. Some examples of organizations that have done some amazing work in this field include fact check oath org in the usS. Full fact in the UK, fact checking across the African continent, there are hundreds of other fact checking organizations around the world that are working to address the misinformation and disinformation affecting the communities. There's one really important standardizing body, the international fact checking network that ratifies these organizations to promote best practices and a code of principles that fact checkers use and they can become verified signatories.
And these fact checking organizations and their certification by the international fact checking network is incredibly important for promoting and pursuing health literacy for a number of reasons. And one is their ability to work in direct collaboration with tech companies in responding to misinformation online. And incredibly important stakeholder collaboration for responding to the dangers of health information on the internet -- the dangers of health misinformation on the internet. Fact checking organizations are the local actors that respond directly to the questions and the misinformation circulating in their own countries and in their own communitieses. And in doing so, they improve equitable access to health information and their methodologies in the publication of their methodologies which is very common for them to share when conducting fact checks is really important to promote an understanding of health literacy and how that fact checking process takes place. And what I argue is most important about their role is, the fact checking organizations unpack the claims or pieces of misinformation within the community context that are being shared. Their members of the community that are responding to misinformation that's affecting their communities. And with that lived expertise, misinformation responses are "relevant" and accessible to the communities that they serve.
But one issue that the fact checking organizations are often limited by is the information or expertise that's available to them. So, if they can't access a public health expert to comment rapidly, misinformation can spread faster than they can address it. Where if a certain type of health expertise is not available, then that type of content may not be fact checked to a information and can lead to further health information disparities. The important role of health communications and public health literacy experts at this point is to contextually the latest

science in ways that are accessible to fact checkers so that fact checkers can make it accessible for their communities.
And as I mentioned earlier, filling this need is the goal of the public health expert database and tool kit program that my team at Meedan is working on to respond to COVID-19 misinformation. We field questions from fact checkers and turn around to have a response in over 7 languages. So what you see in -- sorry if you don't mind going back to the previous slide.
The two images that you see here are pulled from the database that learn about COVID-19.org with detailed pages and visuals if the fact checkers choose to accompany their work with access. Having access to experts is so essential. Fact checking organizations can truly benefit from stronger partnerships and research conducted by the health literacy community. Thank you, next slide. So, why do we focus on fact checkers? It's because technology platforms around the world are already working with these fact checking organizations in order to address misinformation on those platforms. Either through finding new information pathways to the audiences that fact checkers have, or using fact check information to inform the algorithms or the systems that different platforms use to determine what content gets shared with an internet user either first, or later, or never. So What'sApp is working to address the challenge of information accessibility for communities. And they're working with fact checkers directly by enabling the creation of text-bots, I'm not sure if folks saw the bot that the world health organization created to have access to COVID information. Some of those recommendations may not be directly relevant to communities who for example don't have 20 seconds worth of running waters, even time they need to wash their hands. So fact checking organizations have created their own to provide contextualized information to audiences and also to receive back through what'sapp questions from their audiences about content they want fact checked.
What's really interesting for the health literacy community is that these questions that have been shared by their audiences have provided some really fascinating insights about the discrepancies between the information that individuals need or ask questions about, and what's actually published by health information authorities online. And these insights can definitely serve as an opportunity to improve the health communications field. Next slide.
Also used when addressing the second challenge linguistics sensitivity. So, we work to prioritize content and make sure it gets localized not just translated to make sure that the language and the content is culturally relevant to and culturally sensitive. Next slide. To address the challenge of mid-information, those representations based on emerging scientific evidence, it's important to make sure that the information that users see first when they search online is the information you want them to see for a given point in time. So Google has created different pathways through which fact checking organizations as you can see in the images on the right help info. The content users actually encounter, Google's built annotation tools so that fact checking organizations can make sure that their content is surfaced when key terms are searched for on Google.
And you can actually visualize the fact check as you do in the slides, the images on the right side. Next slide. Finally, to address the challenge of community spread, Facebook has also partnered with fact checking organizations so that when these fact checking organizations identify a piece of content as false and flag it to Facebook, Facebook can integrate this information into their own content systems to hides or reduce the ability to view a particular

piece of misinformation which significantly reduces it's distribution. Next slide. With fact checking organizations so central to many search and social media platform responses to misinformation, it's a really huge opportunity for the public health and health literacy communities to get involved. Acting as a resource to fact checkers, supporting their work, advocating for their work to keep their communities informed. And to contribute to these technological processes that I mentioned to address misinformation at the scales required to respond to content from the internet. Next slide. So I summarized some of the challenges that we went over through this presentation and solutions here. And I know that these slides will be available after the presentation. Next slide. And for more information about additional opportunities that the health literacy community has for working with existing technology in response to health misinformation, here's some additional recommendations, and please do reach out with any questions, any thoughts or any ideas for collaboration. This is a community that's really excited to get more involved with public health and health literacy. Last slide. Thank you so much.

»» Ruth Parker: Thanks so much, Nat. That was terrific. And the slides will be available. And there's some terrific resources that you've included on there. Folks have an open invitation to reach out to you directly. So get ready. So thanks to our first two. I'm going to turn to my dear colleague Laurie Myers and let her continue the conversation. Thank you so much.

»» Laurie Myers: Thank you, Ruth. Okay. Thank you so much, what fantastic discussions so far. So in the next part of this panel we will focus on other ways to address the problem of misinformation. I'd like to introduce the next panelist, Briony Swire Thompson, she's been addressing the psychological component of what drives belief in misinformation and the science behind strategies to correct misinformation. Briony is a cognitive psychologist. She investigates what drives belief in inaccurate information, why certain individuals are predisposed to refrain from belief change, even in the face of good corrective evidence, and how corrections can be designed to maximize impact. She's a senior research scientist at the Northeastern Network Science tonight and a fellow at Harvard's Institute for Quantitative Social Science, prior to joining the Network Science Institute she was a doctoral student at the United States of Western Australia Cognitive Science Library and a Fulbright Scholar at MIT's Research Laboratory, I know you're going to really enjoy her content..

»» Briony Swire-Thompson: Hello, and thanks to much, Laurie. If you could just put us to the next slide, please. Okay, I feel like this could be the different slide deck. I'll see how we go. As Laurie mentioned, my work primarily focuses on the correction of misinformation. I've worked with generic myths and facts and political misinformation about obviously health.

So I think health is unique for a number of reasons, mostly health disor disinformation in particular can provide because there are these significant financial incentives that aren't necessarily there with other topics of misinformation. I think it also has these particularly severe consequences with regards to quality of life and risk of mortality which make health disinformation quite concerning. Next slide, please. Okay. Great. So I think when it comes to COVID, it is a bit of a perfect storm here, not least because it takes time for science to establish what is true, this means that fake experts with speak with more certainty because of course they're making information up and when you do so, you don't have to couch everything in the nuance that often comes along with the truth, the true information.

Secondly, I think everyone is quite desperate to get their new research out and public and to read information. This could potentially lead to real scientists' posts -- there's a lot that can change between a pre-print and a published outcome. And I think that sometimes for example, journalists might not realize the difference between these like very new scientific findings and an established published product. I also wanted to highlight predatory journals could be a large problem, I think they're a problem in health in particular. But particularly when it comes to COVID, where there's this real need to get fast information out there, these are journals that accept publications for monetary gain, and they don't have the traditional editorial processes that ensure or try to ensure that accurate information gets out there. Oh. Yes. I hope -- can we progress to the next slide. Okay. There were some slides here, I think these are the slides I was going to post online. There were some slides in here regarding -- is it too late to get those up. I would totally expect it's too late to grab those other slides. I deleted them for -- I didn't want them -- okay. One sec. So what you're about to see -- I believe, is an example of misinformation from a journal. An examination of misinformation which is a journal that has been indexed from PubMed had this which is a scary thing, it's misinformation that claims that 5G causes Coronavirus. This is, it's particularly problematic because you can find it through if people were to post or search in Google Scholar, they will get this. And it looks like a very official publication. It's also okay if we can't find this, I can just keep talking and we can progress as usual. So essentially, what I was hoping to highlight with those slides is that how much health literacy are we really expecting individuals to have when this is a more structural, this is a systematic problem that actually allows seemingly this misinformation to -- here we go . Fantastic. Thank you. Here we go. Here's this example. As you can see, if you progress to the next slide, actually you can see a clip here. So this publication, it was posted on the 16th of July. And it states that 5G Waves can be absorbed by these cells acting like antennas, and producing Coronavirus in biological cells. I wanted to highlight this because this is such a dangerous example of very blatant. Very clear misinformation that has been, if someone has a good level of health literacy and they have searched in these very good places to look for information of the general PubMed, Google Scholar this is what they might find. I first need to teach people in health literacy courses about predatory journals and the difference between really seeing the legitimacy of the journal, but, we also systematically need to kind of tighten these a little bit more. If you press the next slide you'll actually see that it was retracted. There's a organization called retraction watch which is very helpful. And this was retracted on Sunday. This is incredibly old and incredibly new. However the problem is if you go to Google Scholar it still shows up like this. And if you click through, there's nothing there but this is I think this is completely dangerous part of misinformation. Next slide. Please.

So talking about successful strategies, I think can be sometimes difficult in this field because as Kate mentioned, this is really new. Like we're a really young field. We have some recommendations. But because this is such a -- misinformation is such a new science, it could well be subject to change.

Okay. So there is evidence to suggest that critical thinking is a skill that can be taught. But gauging the efficacy of some of these literacy programs is -- can be quite difficult and findings can be mixed. Another thing I would like to highlight is that there's converging evidence that it is -- previous slide, please. Is that there's converging evidence to suggest that it's older adults that

share disproportionately more disinformation online. We have to think about more where we're implementing these health literacy strategies. If people over the age of 65 are 7 times more likely to share misinformation online than 18-30, teaching in schools or universities isn't going to go much for the entire ecosystem online if this is where the strategies are being focused. Okay. So when it comes to actual tips for correcting misinformation, the first one would provide factual alternatives. So if you can say here's the misinformation, it's not this, it's this other thing, next slide, please, the traditional example of this comes from when -- next slide, is that possible. So -- (Laughter). Okay. This is progressing a bit fast. Can you go back a bit please. Okay. There you go. So the traditional paradigm is when you present people with a fictitious, you the reason for this warehouse fire gasoline and if you retract this core piece of information say that's not true, that's misinformation, it leaves this the gap in your mental model. And the best thing to do is to fill it. So next slide, this is where the little match comes in. That if you say people, it's not gas cylinders, it's arson, people are much happier to update their belief. The big problem with Coronavirus misinformation is so often we just don't know the alternative and that also another catch is that alternative has to be as simple as the misinformation which is just sometimes, often the case is the truth is not there. Next please. Providing warnings if misinformation will appear is also very effective. But it's hard to do this if you're not in charge of the presenting misinformation. Next please. Repeating corrections works -- is effective as well. And I think this -- there's some evidence towards what we believe to be true is what we remember to be true. So don't be concerned about repeating the corrections multiple times. This is what leads to my final point. This paper is in press as we speak. It is about facts that are a topic I hear incredibly frequently in these kinds of workshops or in conferences. Next, please. So, a backfire effect is said to occur when you present an individual with a correction and they end up digging their heels in, strengthening their belief in the very misconception that you are hoping to rectify. And a lot of people are very concerned about this. I did want to highlight that this is not a robust empirical phenomenon. What I mean by that is that it hasn't been replicated or when you follow the citation trails, the original paper which is posting this doesn't have strong evidence to begin with. And I'm going to end also on this point next, please. If you've ever heard the recommendation of don't repeat the original misinformation when you are correcting it, this is not true. It's being I think confused with another phenomenon. So the phenomenon that does exist is called this illusory truth effect. This occurs when information is repeated. There's to correction at all. This information is repeated, it does become, and people are more likely to believe, to think that information, that familiar information is true. However, as soon as you pair with this correction, this does not happen. So feel free, because if you don't repeat the original misinformation, often people don't even know what you're talking with or what you're trying to correct. But it's very important that you always clearly and saliently pair this correction with the original misinformation. So I think if we're going to -- if there's one take away from this presentation, next, please, it's that -- next slide, please -- on the whole, people are actually quite good at updating their belief. It's a really positive story. When they read corrective evidence on the whole, people are -- from all of my research incredibly good at updating their beliefs. Those of you that have -- even on social media, with large followers you can use this as a platform to really correct information out there. Yes. That's the end of my talk. Thank you very much. You can fast forward if you'd like.

»» Laurie Myers: Thank you very much for this wonderful discussion, Briony, I would like to focus on potential health literacy strategies we can use to address health misinformation. I would like to introduce Sylvia Chou. She's the director in the Health Communication And Informatics Research Branch at the National Cancer Institute at NIH. Trained in sociolinguistics and public health. She has expertise in qualitative and mixed methods approaches. She's led a number of NIH initiatives on the role of technology and social media in various areas of health. Dr. Chou has more than 75 scientific publications many of which have documented health related internet use, many of which have documented health related internet use, the impact of social media on health communications, health literacy and the cancer prognosis and goals of care communication. So without further adieu, I will turn it to Sylvia.

»» Sylvia Chou: Thank you so much, can everybody hear me? Good. All right. Well it's an honor to be on panel and share some of my thoughts on this topic. At NIH we've been a part of several health literacy initiatives and funding opportunities. And I think one observation, most of you will agree is that there are diverse definitions of health literacy and different understandings of its role in communication. And with this new sort of eco system and the rampant spread of information, it further complicates how we develop and deploy health literacy strategies. From the onset it's important to acknowledge that when we say health literacy it may mean very different things to different people. So, we can go onto the next slide. For the last three and a half years, our team has been really working towards crafting a research agenda addressing health related misinformation. Well before COVID-19. And so, some of it results in publications and one exciting one I'd like to highlight is the upcoming publication in the American Journal of Public Health, a special issue, a theme issue that's focused on health misinformation. And so to do all this work, I think we can just start with some definitional work. So we've tried a lot of different ways to conceptualize misinformation. Here is just one of the most current definitions. Health related claim of fact that is false based on current scientific consensus. Now, that is a definition that's very focused on the statement, right. It's not really looking at the context. And I think as we see from even the presentations before me, it's very important to consider intent. It's just so division to -- is it to Sow division, again rat profit, to create chaos? When we think about impact. A piece of COVID-19-related misinformation that gets people to drink juices more is very different than ones that get people to not wear masks and are socially distant. So, also the medium and the sort of the way social media and information silo maybe creates how much information is shared is also important. So that's what I'm going to spend just a few minutes talking about. Next slide, please. To start, I think there are a few things the literature has been more or less established to tell us about how misinformation spreads. Here is just what I can come up with that I think we have more at least still growing, but some evidence. Divisive disinformation campaigns erode consensus, or the sense that there is consensus in the scientific literature. And also erodes trust in experts. Eco chambers perpetuates these divisions. Falsehood tends to spread easier and faster. Credible information is often complex, nuanced, evolving and uncertain. These are important things in communication, anyone who has done work in health communication can attest to the importance of source, format and health literacy of the community or the audience we're communicating with. And we know that the social media industry we can even see today or in everyday headlines, that industry and government's policies and practices towards misinformation and content moderation are rapidly

evolving, please next slide. So I thought it may be helpful, we can move onto the next slide, to come up with some kind of a working taxonomy, I invite the audience to think about what I'm not considering or ways we can think about this better. But I came up with, you know, the idea of taking stock of the kind and the topics of misinformation about COVID-19, is a hard work. Because it comes at various -- some people liken it to a game of whack-a-mole, they come up, they disappear and reemerge. I came up with six buckets. Overall COVID disease characteristics either complete denial of the pandemic, down-playing the susceptibility and disease is he verify or linking unsubstantiated symptoms to COVID-19. We know there's a lot of misinformation about the origins and the spread of the virus from conspiracy theories linking Bill Gates, Chinese labs to certain stigmatized cultural practices to also Federal, State and local and government organizations responses, especially related to quarantine and stay at home orders and policies. And vilifying certain public health professionals. And the right column, I think these are more individual specific behaviors whether its social distancing guideline, mask wearing oh are the use of unproven treatments such as home remedies or unproven drug, hydroxychloroquine resurfaced in the news. And promoting dangers about products. Finally when the oh COVID vaccine is finally developed, misinformation about vaccines generally about especially about the development of COVID-19 vaccine. So next slide. Please. And with that, I'd like to sort of take the COVID vaccine as an example to talk about what I see as more traditional health literacy approaches and how in light of misinformation, we may need to think in some new ways about how to deploy health literacy approaches.

So I would think intuitively that we currently live in a world without vaccines. So, where we would normally be meeting in person in such a Roundtable activity, and just the fact that our life, you know, is the way it is, because we don't have a vaccine. It would be a sort of easy place to think about encouraging vaccine uptake when one becomes available. So if you go with that thinking, then traditional health literacy approaches would include proactively promoting vaccine literacy, such as doing interventions in targeted media campaigns, or tailored peer-to-peer school-based community-based vaccine education, to provider patient communication and one of the sort of suggestions is to have strong inconsistent messaging from screen, from the screen literacy literature.

In the meantime, these are the traditional approaches we have in our pockets, but we need to think about strategies that are already being deployed by anti vaccine groups. And we know that the way, if you understand these strategies, they can't simply be undone with correction or fact checking alone. So things like propagating rhetoric related to personal freedom, and I think Kate gave us a great outline of just what it means to spread disinformation by leveraging these things like, you know, certain values, feelings, emotions and also discrediting agents involved in vaccine development to targeting already mobilized and highly emotional topics, you know, such as racial justice movements and abortion controversy. So going to these places where there may be already a great place of distrust and sowing misinformation about vaccines in those communities really make the spread of these types of messages so much more effective. Can we go to the next slide?

So I think here are some strategies that might be worth trying. There's not a lot of good established literature on this sort of the efficacy, but I think these are worthy targets. Can we induce skepticism toward misinformation agents? Similar to the ways like the truth campaign

that aim to discredit to with marketing tactics. Thinking about tools that can help identify and sources that are credible and also resources for debunking myths and misinformation. We've heard some examples of that on this panel. Cultivating science literacy to help people understand that uncertainty and evolving nature of science is part of how we understand health and science. Combating conspiracies by thinking about how to partner with maybe -- with former members of the community groups or online influencers, to mobilizing the majority of people who may be more supportive of a vaccine uptake. And last one is one that we're oncing everyday in terms of proactively monitoring, flagging down ranking and removing content.
So I think all together, and these boxes are just I think important players in this space. These efforts can help address cognitive, emotional, social and contextual factors of misinformation spread. So next slide, please. And this is a very exciting study that my lab at NCI is developing or planning, and we're hoping to do a randomized experiment to look at the use of storytelling and narrative-based messages to promote recommended behaviors on COVID-19 related behaviors. So we're going to be using, discussing attitude, beliefs and behaviors at baseline and giving people congruent messages one in a personal experience narrative format and one in a non narrative didactic format to see which one is more effective at either changing or just changing attitudes and behaviors. So next. So that one, this one we don't have results yet. But I think similar research endeavors can be very helpful to really help health literacy and health communication fields to know what we do with misinformation.
So my final slide is really my sense -- how do I say this? I think the priority for us is to put health literacy in context. So, health literacy doesn't exist in a vacuum, it's not just about providing good information or filling in the gap where there is a lack of good information. We need to consider the role of technology, identity, values, biases and emotions, and learn from examples of successful or effective communication.
So in closing, these are my sort of three places where I think health literacy approaches or interventions are ready to be deployed, but that they need to be done in a different way. The first is to think about digital literacy. So it's not just a matter of discerning a piece of health information. It's about fostering fact checking skills and awareness of you know, these algorithms and techniques to make you want to click on something or share a Meme that gets you really excited or angry, or just you know, these sort of technology algorithms that encourage the spread of misinformation. I think that needs to be part of the health literacy intervention.
The second one is I think we need to redefine what is meant by vulnerability. So traditionally, we think about limited health literacy either in terms of limited English proficiency or limited education. But I think vulnerability has taken on a new meaning and the need to think about are you in some kind of online information silo? Do you have a Conspiratorial mindset? We need to do health literacy intervention that penetrates silos. Lastly any health literacy efforts need to consider the role of trust and how can we foster trust and restore trust as part of any initiative? So sometimes if we just promote a piece of information like hand washing, or mask wearing, we don't think about what that means in terms of the implications on the trust we are or are not building with our audience. So I think that is one area that may be ready to be incorporated into other health literacy considerations. And I'll stop there. Thank you.
»» Laurie Myers: So I have just learned so much from all four of you. And because of just the innovative content we've made a change in the last five minutes in how we're going to run the

last few minutes. So we think that it would be really important for each of the speakers to reflect on what they learned and how it relates to one another for just a moment or two. I think the message that I heard loud and clear is I had seen on many of the questions just this frustration, this feeling that misinformation is not something that we can move. And I think the number one thing I took from the speakers was optimism. That in fact there are tactics, there are ways that we should be thinking about combating misinformation and there's so many resources that have been shared here. I think another theme that I heard in the questions from the audience members that was echoed here was the important role of so many players in the health system. So obviously, people hear from an IT lens add another perspective, but also the role of the importance of fact checks and journal and media and clinicians and combating misinformation, this is not something that anybody can do alone. Those are some really really important take-aways. Maybe now we'll go back in order of speakers and just reflect for a moment or two to begin. So I think Kate we'll go back to you.

»» Kate Starbird: Sure. Yeah. I mean it's just been so much great content and to see how these different pieces tie together. I'm going to go back and rely on the things that I know the most but try to pull up a few things that I heard today that I think are really important and connect them. I think as we look at this problem that we have to address it from multiple perspective. We have to address it from health literacy, education, I think the platforms themselves, the social media platforms that are facilitating a lot of the conversations they need to make changes, that I are making some. They need to continue to make changes to help with these as well. There's a role for government and policy, I think that's going to be complicated and we have to think about the implications of that. But I do think this is sort of a all hands on deck kind of moment. And that this problem is very complex. We need to solve it from multiple directions. A couple of the really interesting things I heard. Briony was talking about the backfire effect, I've been so frustrated with the research on the backfire effect and and I'm so happy we've come around and decided that's not the path forward, for years we were telling people not to correct people online. And we were telling journalists not to talk about it because we would amplify it. We gave the wrong advice, it began to fester at the edges and move into the conversation. We start develop and spread new norms around corrects oust, around correcting others with empathy, with, you know, in ways that don't call people out and say oh you're a bad person. No misinformation is spreading. Everyone's making mistakes, how we help yourself, train ourselves to correct our own mistakes and also correct other mistakes. I think there's really some room for the developing and communicating these new norms. And I really love that last -- not the last slide, waited a third to the last slide about communicating, I left it in the notes for myself. But I can't find it of course. But considering novel communication strategies by Sylvia. There are some really good ideas there. One of the things I didn't bring up in the disinformation conversation but was in my notes you hit on it is this intersection between disinformation campaigns and authentic activism, we're seeing that in the antivaccine space but other activist groups in political motivated groups get targeted to become vectors of misinformation and disinformation around health and COVID-19. That's something that's really hard to address. But it's something to think about how do we help activist communities protect themselves from these kinds of cultivations and infiltrations by people that have other motives. Again I think it's about education, but it's also about platform design and platform policies. I

think we need to work together holistically across the different sectors to address the problems. I'm done. (Laughter). I'll pass it onto the next speaker.

»» Ruth Parker: Thank you. Next.

Nat Gynes: I think Kate hit the nail on the head with a lot of these conclusions.

»» Nat Gyenes: I'd love to add that I think the tech community has learned a lot from the public health community about communications, about intervention design, about controlling for factors and populations and understanding that there's nuance in the populations that we're trying to target. And it's only our hope that in coming to this discussion from the public health technology and psychology sectors that we can work to create more interdisciplinary solutions. We all come with such different perspectives. And this is, I think one of the most interdisciplinary fields I've ever come across is the field misinformation. So the fact that there's an opportunity to truly learn from one another, and that, getting us -- creative spaces where we can have these types of option conversations is really important. That's all I have to add. Briony.

»» Briony Swire-Thompson: Yeah, absolutely. I'd like to echo what both Nat and Kate have said. I think fistly this is such a complex problem it needs to be addressed from these different angles. I also think that you know, the science is impacting the policy and vice versa, and Emory University think there's such a complex web where I think, the example that brings to mind again from the backfire effect is when I heard that funders with are threatening to pull their funding from fact checking companies due to the science on the backfire effect. And I think like, it's incredibly dangerous, like, if we don't have fact checkers, if there's not something to pop up when someone like puts in a search term of a piece of misinformation, I just can't -- that would be a really negative consequence. So I think you know, both researchers have a responsibility to do the best science they can. And I this I the platforms have a responsibility to you know make changes that make sense for a factual evidence-based world. And I just think like everyone in a way has to do their part. And I think never before I have seen such a -- I think everyone's just jumping on the bandwagon in a good way, people have really woken up to the fact that scientifically it's an interesting problem and one that is kind of desperately needed as well. So I think its a luxury in a way.

»» : Sylvia?

»» Sylvia Chou: Thank you, it's a very sobering moment. We have 150,000 or more deaths already. Things aren't getting better. I feel like from the perspective as a public health practitioners and someone who cares about communication and who cares about health literacy, this kind of conversation where we bring in you know, novel approaches. We have nothing to lose. We need to try something different, right. So I think traditional health literacy approaches have worked for certain things, but we can tell it's not working in this world of information ecosystem where we used to be so happy to hear about the democratization of information and what its brought us is this idea of this -- cacophony of voices and opinions that are very hard to mitigate the effects of once you're exposed to it.

So I think if one thing is that we can't remain naive. This misinformation is obviously not a fringe topic. And we need to work together. The people who study misinformation and disinformation need to be at the table when we're designing public health campaigns and messaging so that we don't talk past each other and have this problem of great information that's not accessible and used and continuing to have these problems of misinformation gaining ground. Because

they tap into people's feelings and emotions and they are ready-made effective. So that's what I have to say.

»» Laurie Myers: Finally. Ruth?

»» Ruth Parker: Thank you all so much. I have to echo where Laurie began with, it's a hard time. But you all give me some options. And I really appreciate, you know, your thinking, your research, the work you're doing, the collaborative spirit that you bring forward. We need you. And so, thank you for what you're doing. I always go back in my mind to thinking about health literacy and the conversations we've had for years about it being the worst content, which we've done a lot of work on, and also context specific. That being sort of fundamental to how we saw it. And I think that this conversation really helps underscore the content, absolutely, yeah. But that context and the emotions, and the role that they play, I this I you really have sort of brought that to bear in a lot of the discussion that we had. And for me, I'm hearing some new horizons for health literacy. So I get kind of excited about that. I've been around this thing for quite a long time. It's quite exciting to think about the next generation there and the kinds of work that are on the horizon and the kinds of people that can be engaged in it. Kate, your comments underscore for me this is real. It's actually dangerous. You know, this misinformation, disinformation, you're not saying this might be out there, you're saying this is out there, guys, how much of it... probably more than we want -- than a lot of us even really know about and think about. And so I really appreciate just you know, your highlighting that this is a real thing and we've got to pay attention to it because it's actually dangerous. Nat, I love this idea that fact checking is probably a new horizon for health literacy. You know, the role of having people who understand health and public health, and the various entities that are a part of it, there's a seat at the table there, collaboratively. So I think that's a really important new horizon for the field. Briony, I'm very excited to know that because I think certainly my children among others would say that I do repeat corrections repeatedly. And so you've reassured me that that's not all time wasted. And I have a small amount of faith in my humanity around me that people are actually good at updating. And so go humans! So let's keep updating and not forget that that's actually empirically grounded. So thank you for that. And Sylvia, the taxonomy you gave us for thinking through something complicated was incredibly helpful. I appreciate that you put that out there and that you underscore for the Roundtable and all of us that health literacy doesn't live in a vacuum. That's a great one. It doesn't. And there's a lot of work. I also appreciated the repeated echoes of the importance of trust, and that trust is really foundational. Just like accessible, understandable, evidence that's the best that we have available that does get updated, making that something that is there but also doing what we can to build trust as something that is truly foundational to our individual and our collective lives. So thank you all so much again to Rose and to Alexis, we appreciate the opportunity to put this out for others, you all heard from some folks that I'm going to call them the hope of the future, they said reach out to them with your questions and your thoughts. I would encourage you to do that and to keep this thing moving forward when we need it. So thanks so much for the opportunity. It's great to be with you. Let me thank everybody again, the speakers, the audience, the moderators for the wonderful discussion we had. Again my final as a reminder the webinar was recorded. It will be posted on the Roundtable web page by tomorrow. Please sign up for the Roundtable listserv

for updates and about future webinars and workshops. Take care everyone. Be safe. Thank you.