

Protecting The People Who Make America

**A guide for building vaccine trust
and stewarding COVID-19 vaccination
among front line manufacturing workers**

Developed in partnership with:



**CENTER FOR
PUBLIC INTEREST
COMMUNICATIONS**
UNIVERSITY OF FLORIDA

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INTRODUCTION

The nation's response to the COVID-19 pandemic has evolved with lightning speed. Vaccine availability is now open to everyone in the United States over age 12. It's moved from a system of limited, precious appointments to walk-up clinics in many locations. The White House has established a national goal of 70% of the U.S. adult population having received at least one dose of the vaccine by July 1.

Many states, particularly those where manufacturing facilities are concentrated, have lifted or have plans to lift policy interventions limiting capacities, mask use and physical distance requirements. The Centers for Disease Control and Prevention has also announced guidance that fully vaccinated people no longer need

to be held to masking and distancing policies.

All of this is great news for recovery.

Yet there is still more work to do. The Kaiser Family Foundation polling work shows that after a period of rapid growth in vaccine uptake, enthusiasm or willingness to take a vaccine may be reaching a plateau. States are reporting that vaccine supply is now outstripping demand; yet, we should recognize that this isn't a stopping point, but a call to reexamine our approach.

There is no single solution to this challenge because the reasons people choose to vaccinate or not are varied, complex and not specific to demographics. And even those willing or eager to get the vaccines may face logistical barriers.

We created this guide to help the nation's manufacturers apply insights from social, behavioral and cognitive science to build trust in vaccines among their employees. The guide offers interventions designed to increase uptake of the vaccine among those who are willing but have not yet been able to receive their doses; those who are taking a "wait and see" approach to the vaccine and the "moveable" members of the group who are saying they will decline the vaccine.

SUMMARY

The **Manufacturing Institute**, the workforce development and education partner of the **National Association of Manufacturers**, in collaboration with the **University of Florida Center for Public Interest Communications**, created this guide to help the nation's manufacturing employers activate research-backed strategies to protect their workers and communities. The nation's employers can use their position as one of the most trusted institutions in our society to build confidence in the vaccines protecting against the SARS-CoV-2 virus and thereby reducing the impact of the COVID-19 disease on our economy.

We've seen in the research that the Sun Belt and Rust Belt state regions, where a majority of manufacturers are located, are exhibiting slightly lower vaccination rates than the U.S. average.

This is a clear opportunity to activate community-level strategies to remove barriers to vaccine acceptance. Increasing vaccine confidence in these areas requires us to examine what

makes these communities unique and to apply messaging and strategies that address how people in these communities see themselves, their lived experiences and their essential role in building our society.

The reasons that many have not started, or finished, an inoculation regime are varied. Some cite the science and speed of vaccine development, uncertainty over long- and short-term side effects, logistical challenges, trust in the national response, a perception that the disease won't hurt them or their loved ones and freedom of choice.

Designing effective vaccine uptake interventions will require you to approach the challenge with a deep understanding of the communities you are trying to reach, recognize that traditional demographic segmentation may not work in this context, and that a campaign of one-on-one conversations may be your best tool for the most resistant. This guide will share some suggestions of actionable tactics and frameworks for your work.

Communicate from a place of trust. Build trust by communicating transparently and frequently about the vaccine, organizational policies about vaccination, vaccination rates within your facility and why your organization is helping its employees with this decision.

Help remove barriers. Limited access to transportation, paid leave and in-language information can create barriers to getting the vaccine. Make the vaccine easy to obtain or help your employees feel supported if they choose to receive the inoculation or experience side effects from it. Incentives can work among some hesitant communities as well.

Highlight trusted messengers. Engage local authorities (doctors, civic leaders, peer influencers, supervisors, etc.) to share information on the vaccine. Tell their stories while integrating the science of the vaccination efforts, versus just sharing facts. Recognize that many who have not yet sought the vaccine are more motivated by information from their community and people they know and may be more skeptical of “outsiders.”

Customize tactics to appeal to your community. There is no “one size fits all” message. To date, messages have centered on collectivist motivations (valuing the good of the community over individual interests—e.g. protecting the most vulnerable, reaching “herd immunity,” etc.), yet many of the communities where vaccination rates are the lowest demonstrate reverence for individual self-reliance (“protecting my family,” “my choice,” etc.). Match the frame of your message to perspectives of the communities you are trying to reach.

Celebrate as a community, but address fears at the individual level. Communicate inclusively, affirming you heard their perspective, and in a way that reduces “othering,” which may drive those who are hesitant even deeper into hesitance.

SECTION 1

HOW WE APPROACHED THIS PROJECT

The materials in this guide were developed by the University of Florida Center for Public Interest Communications, following a robust research process, in collaboration with The Manufacturing Institute. Its recommendations and values are rooted in behavioral, cognitive, social and communication sciences, soliciting insights from scholars and front-line workers, and through a representative national survey of 435 respondents aligning with representative demographics of manufacturing workers.

The Center conducted a meta-analysis of research findings through a series of convenings of experts in multiple areas of scholarship through a process the Center calls a “living literature review” and commissioned literature scan summaries by other scholars. The insights from these processes were summarized and reviewed with the participating scholars and a select group

of front-line workers. They were integrated in the survey design and sample messages used in the recommendations of this report. The insights were also tested in interviews with front-line workers; insights about their experiences and vaccine beliefs were also collected.

The research focus of the project was targeted to gather insights about the worldviews, identities and moral values of the manufacturing workers and design messages and guidance for employers to provide information and opportunities for their workers to get the vaccine.

Insights from the survey, highlighted in **SECTION 6** of this report, were also synthesized and integrated into the recommendations for manufacturers, which appear in **SECTION 4**.

NOTE ON SEGMENTATION: An important lens for examining this challenge, in addition to demographic differences among the workers who are employed by the nation's manufacturers, is **psychographics**.

Demographics refer to specific data about populations. These kinds of data include factors like gender, age, income, race and ethnicity and the geographic regions where people live and work. Psychographics refers to the study and classification of people according to their attitudes, aspirations and other psychological criteria.

The difference is important because people bring their own beliefs and attitudes about vaccines and the healthcare system to the discussions on the vaccine and their decision to get vaccinated that may not neatly align with their demographic identification. Demographics are easy to apply segmentation methods to populations but may not be the most effective. To determine what kinds of messages and calls to action will resonate with those we most need to act, we need psychographics to help us understand what a community sees as right and wrong, what's most important to them and which groups they see themselves as belonging to. These concepts offer an even more nuanced interpretation of how people see the world around them.

The strategies and messages developed for this guide rely heavily on customizing messages to people's identities, moral values and worldviews. How we see the world influences our perception of truth and authenticity. Our identities affect whom we trust. And our moral values influence our gut instinct to information and affect how we interact with authority, whether our responsibilities are to an entire society or to our closest friends and family. In the messages section, you'll see that we've provided guidance on how different messages and calls to action will resonate with people keeping their worldviews, moral values and identities in mind.

SECTION 2

THE CURRENT U.S. & MANUFACTURING WORKERS CONTEXT

For the insights in this section, we reviewed published scholarship, public polling conducted by a range of groups and organizations and news reports and then supplemented that with insights from a survey we conducted of a demographically representative sample of 435 Americans (whose makeup aligns with the demographics of manufacturing workers, according to the makeup highlighted by the Bureau of Labor Statistics and the U.S. Census) and a conducted a series of interviews with front-line workers identified by our partners at The Manufacturing Institute.

We identified themes from that review and offer the following context to keep in mind for the vaccine communication work moving forward:

The groups of people for whom this messaging should be designed are growing smaller, and the efforts should now be about more than just sharing general information about the vaccine.

- There is a large population (nearly 30 million Americans, according to an analysis of U.S. Census data) who have not yet been able to schedule a vaccine or take the opportunity to get inoculated in addition to those adamantly resistant. Communicating about the vaccine will need to shift specifically toward those open, but not yet vaccinated people who are worried about getting the vaccine or who may be unsure how or when they will get it.
- Nationally, while more and more people are choosing the vaccine, mid-May national polling data show that, on average, residents of Rust and Sun Belt states—manufacturing-intensive regions—are below the national average for vaccine receipt:

“It seems like most of the people who haven’t decided on it yet have kind of already made up their mind on it. I don’t know where they’re getting their information for their reasoning of why or what that information is. But there’s a handful of people that I’ve talked to that they’ve already made their decisions for various reasons. Some don’t feel that they need it because they’re young and they’re in good shape or they’re healthy. Others have actually been advised by their doctor, not to get it yet, for whatever reason. We don’t talk about it a whole lot, I guess, so I don’t really know.”

– **Unvaccinated mechanic from rural Minnesota**

- Rust Belt states report 37.7% of the total population is fully vaccinated, matching the U.S. average, but trail the U.S. in the percent who have received at least one dose, 46.3% (two points below the U.S. average of 48.1%).
- The Sun Belt states are even further behind, with 33% of the total population reporting as fully vaccinated and 41.8% receiving one dose (5 and 6 points below U.S. averages, respectively)
- In 2021, Surgo Ventures started grouping U.S. populations, based on polling, in five psycho-behavioral segments on COVID-19 vaccine uptake: “the enthusiasts, the watchful, the cost-anxious, the distrustful of systems and the vaccine skeptics.” In May, Surgo reported that 35% of U.S. adults fell in the last four segments: 8% were watchful, 9% cost-anxious, 4% distrustful and 14% skeptics.
 - Rust Belt states are roughly aligned with U.S. averages, reporting 9% watchful, 9% cost-anxious, 3% distrustful and 15% skeptics.
 - The Sun Belt states reported fewer enthusiasts than the U.S. average with 9% watchful, 11% cost-anxious, 4% distrustful and 17% skeptics. Skeptics in this region are 3% higher than U.S. average.
- A Kaiser Family Foundation study found: “Among those who are open to getting vaccinated but have not yet tried to get an appointment, reasons range from safety concerns to logistical barriers to questions about eligibility, and vary widely by vaccination intention. Those who say they want the vaccine as soon as possible mainly cite logistical concerns and information needs; those in the wait-and-see group mainly express safety concerns or a lack of research, and those who say they’ll get the vaccine only if required mainly say they don’t feel they want or need the vaccine.”
- In the survey run for this project we found the following top reasons people

gave for why they were currently not planning on getting the vaccine were:

“I have safety concerns”	69%
“I do not trust the current information about it”	66%
“I am worried about side effects”	60%
“I do not trust the media”	52%

We also asked about access: “Considering how you and your family access healthcare now, if a COVID-19 vaccine becomes available to you, will you have a difficult time getting it? In other words, are there barriers you face in getting medical care, including cost, transportation, which will impact you getting a COVID-19 vaccine?”

- Forty-two percent said yes they would have a difficult time getting the vaccine. But concerns about access among those who are hesitant were much lower. Only 17% of people participating in the survey who said they are the vaccine-hesitant sample said they would have trouble getting the vaccine. Considering these differences those who are currently saying they are not getting the vaccine have concerns beyond access.

Worldviews and identity are now critical indicators on whether or not someone is planning to get the vaccine.

- Our survey showed that those who indicated they were hesitant or have not yet received their full dose were more likely to have individualistic worldviews and less likely to have hierarchical worldviews (deference and respect for authority).
- In other polling work, resistance to the vaccine has also been reported to be over-represented in conservative circles, and while that rate has been falling, it may be reaching a plateau.

“People who are oriented around notions of liberty and are really concerned with autonomy and don’t want anybody telling them what to do, those people are going to be more concerned with the response. Whether or not they believe [the virus is] real or not is almost irrelevant, because they want to be left alone regardless.”

—Adam Koon, Ph.D., Johns Hopkins School of Public Health

- In work the Kaiser Family Foundation published in April, the poll found that “one in five Republicans (20%) say they will ‘definitely not’ get vaccinated in April, down from 29% in March but still substantially larger than the numbers of people who are reporting hesitance among independents (13%) and Democrats (4%).”
- Liberty, freedom of choice, and individualism were apparent values among those who did not want to receive the vaccine. The government infringing on their rights was seen as an issue.

“I’m from a very small town of 750 people in central Illinois, and most of us are about as conservative as you can get, and so yeah, a lot of the threats of liberty and personal freedoms is what a lot of people in our area feel like. And especially because you keep. . . I mean, it does sound threatening: ‘Well, you can’t travel if you don’t get the vaccine. If you don’t get the vaccine, you can’t go here, you can’t run your business, or you’ll be removed from a store or a restaurant. . . That’s the way people perceive them, if you’re trying to control me and tell me what my liberties are and take them away. So yeah, especially in the Midwest, I think many, many people have that perception, and it makes them defensive, to be honest.”

— **Unvaccinated mechanic from rural Illinois**

- Respondents who are hesitant saw health problems and solutions as an individual’s responsibility. If someone they knew had COVID-19 and was very sick it was because they had preexisting conditions. They also think they personally have a low risk of getting a serious case of COVID-19.
- Those who are vaccine hesitant aren’t as worried about getting really sick. In our survey 24.7% of those who reported they have a “limited risk” for getting a serious case of COVID-19 were vaccine hesitant/unsure compared to 15.4% of the overall sample.
- They said that if someone is vaccinated then it shouldn’t matter to those who are vaccinated if others chose not to because the individual vaccinated is protected.

“People. . .have a more individual mindset, you know, there’s a lot of farmers in this area and so there’s a lot of that kind of older generation type mindset: where we work hard for what we have and we look out for, you know, worry about yourself. Not in a bad way like where we don’t care about other people, but no one’s going to take care of you, but yourself.”

—Unvaccinated mechanic from rural Minnesota

- This decision is seen as personal and not something to talk about.

While we often express or align our worldviews and identities with our nation’s political parties, it’s important not to draw politics into this discussion.

- As U.S. vaccination rates provided per day have been slowing from the peak, scholars and health officials have started to look at how they might segment remaining populations, and have identified those identifying as Republican are among the more resistant. While this is a simple demographic segment, aligning messages simply in this frame may not be productive.
- Work by the Pew Charitable Trusts looking at hesitancy among Republican men shared a caution of pulling politics even more into the discussion of the COVID-19 pandemic response: The article highlighted Kentucky state Sen. Ralph Alvarado (R), a 50-year-old physician who said that a lot of people are fearful when politics is involved, because “people pick sides instead of picking the message.”
- The Kaiser Family Foundation also affirmed challenges with political framing: Even with hesitancy prevalent among conservatives, nearly 80% of Republicans said that a vaccine endorsement from former President Trump would NOT make them more likely to receive a vaccine.
- In our interviews, front-line workers shared with us that they think media coverage of COVID-19 vaccines has become politicized. One said that vaccination is now like politics and religion, you don’t talk about it.
- In our survey 60% agreed or strongly agreed that there are political motivations associated with the COVID-19 vaccine.

Medical information – or disinformation – affects willingness to get the vaccine; among those who have not yet received the vaccine, there is an observable distrust of science and government officials, and a prevalence of rugged individualism.

- In recent weeks, there has been a theme in the news coverage of the vaccine efforts, looking at the demographic pockets that are still showing hesitancy on receiving the vaccine. A few themes have emerged in that coverage:
 - A sense of individualism is strong among the population. In Pew’s work looking at Republican men, an example includes quotes from Mississippi State Rep. Brady Williamson (R), 44, who said he’s unsure whether he’ll get a vaccine because “it hasn’t been out for a long time.” He also argued that he doesn’t need it because he is “in the gym and fit” and doesn’t have underlying health conditions. He said he doesn’t like the government to make decisions for individuals, businesses and churches.
 - A disinformation effort is active in targeted media. The Miami Herald, among others, covers resistance in Spanish-speaking populations and highlighted vaccine disinformation is prevalent in Republican and Spanish speaking-oriented spaces on social media.
- Among the populations who have not received the vaccine, there is a belief that if you’re young and healthy, then you don’t need an inoculation.

“Some people just feel like being younger and not having any health issues currently. They feel like ‘Oh, you know it’s not something I really need to worry about too much because I’m young and in good health.’ I guess there’s a perception that the people who have got it (COVID-19) and struggled the most have had health issues already.”

– **Mechanic working in a manufacturing facility from rural Minnesota not getting the vaccine**

- The resistant also mentioned not wanting to get the vaccine because of the uncertainty of the long-term side effects, and those who have had it had “really bad” side effects. For instance, one worker in our interviews was concerned about the emergency authorization and listed the ingredients in the vaccine he thought could lead to sickness or autism (which has not been proven in studies of the COVID vaccines nor general vaccine studies experts consider credible).

- Despite mistrust in medicine, medical providers were the most effective when communicating with some resistant audiences. Frank Luntz, a renowned Republican pollster, has been conducting work on vaccines with the de Beumont Foundation. His work found: “The single best messenger is your doctor. The second-best messenger is any doctor. The third-best messenger is somebody who you trust who has demonstrated character,” Luntz shared in The Wall Street Journal.

With that distrust, however, there is a bright spot for our nation’s employers: “My employer” is among the highest-rated institutions in public trust; nearly 8 in 10 employees expect their employer to act on societal issues.

- In the 2021 Edelman Trust Barometer spring update, the group reported that “The public is asking business to take on more societal challenges because they are tired of waiting for their public servants to get the job done. Trust in business has increased over government in 11 of the 14 nations since January 2021.”
 - In the measured institutions, “my employer” and “business” enjoyed trust ratings of 77% and 62%, respectively. NGOs, governments and the media were all rated below 60%.

It’s important for us to recognize that people say they are tired of the discussions on the vaccine and the response to the pandemic.

- People have information fatigue and are tuning out messages. Many in the worker interviews said if they want information, they know where to get it.
- Some who have not yet sought the vaccine said they see messages about the vaccine as divisive and that these messages try to shame and guilt people into getting the vaccine. Shame seems to create defensiveness (e.g., messages focused on simply “protecting your family by getting a vaccine” lends some to interpret those that don’t take the vaccine don’t love their families).

“I also feel that they are making it seem as if you don’t get the vaccine, you’re the minority and you’re being shamed for that, for having that opinion.”

—Unvaccinated mechanic from a small town in Florida

Messages about reaching herd immunity in the U.S. or globally may not be productive.

- From the early days of the pandemic, the stated public health goal was to reach a protective state where a large percentage of the population was inoculated against the disease, referred to as “herd immunity.” Now, some experts have raised questions about when or even if, herd immunity is possible—particularly globally. Many countries are reporting vaccination delays and slowdowns, either because they can’t get enough shots or their citizens are reluctant to get inoculated.
 - If everyone who said they were willing to get the COVID-19 vaccine actually did, just 38 of the 116 countries and areas that Gallup surveyed throughout the latter half of 2020 would reach the minimum 70% estimated threshold for achieving herd immunity.
 - “Herd” or “community” immunity is not something we achieve collectively with everyone receiving the same benefits of protection once a certain percentage of the entire population is vaccinated. Pockets of society where vaccination rates are lower will remain more vulnerable.
- Herd immunity may be hard for people to conceptualize. The challenge with such large and uncertain numbers or goals is that this may trigger a few harmful biases that behavioral economists and social psychologists have observed: psychic numbing, where the challenge is so overwhelming that we disconnect, and feelings of pseudo inefficacy, where the challenge seems so large that our individual acts cannot contribute to the larger goal, so we do not change our behavior.
- This does not mean we should give up. Even without global herd immunity, if communities can protect the populations that are most vulnerable to the disease and keep infections down, “you would already be making progress in the path of the economic recovery,” Deyi Tan, a Morgan Stanley economist, said in The Wall Street Journal. Connecting larger goals to a connected and observable population (e.g., my family, my plant, my town) may increase willingness to participate in the activities.

Among this worker population, we can invoke the historic importance of manufacturing to the economy, activating pride in their work and roles in our society

- Manufacturing plays an essential role in U.S. GDP and employment of many regions, and the impact of this work globally (“manufacturing in the United States would be the eighth-largest economy in the world”) .
- We can also recognize that in times of crisis, the nation turned to manufacturing as a way to rally support. Messages from the National Association of Manufacturers are already invoking the allegorical cultural icon Rosie the Riveter, but there may also be ways of invoking each locality’s participation in production during conflicts, manufacturing involvement in public health, etc.

SECTION 3

SUMMARY OF RESEARCH

FOR BUILDING CONFIDENCE AND OVERCOMING BARRIERS

To activate and ensure that our strategies are rooted in science, the Center for Public Interest Communications launches each communications project with a methodical review of scholarship from a range of disciplines to form a basis of our strategy design and hypotheses. For this project, we engaged nearly a dozen scholars from multiple disciplines in behavioral, cognitive and social sciences, through a collaborative “living literature review” process and supplementary research scans. (See *scholar bios in the Appendix C.*)

This section summarizes and highlights some of the research insights that we have applied or recommend for partners to keep in mind when customizing the campaign for their communities.

Our meta-analysis discovered the following:

- **People do not get the vaccine for three reasons** 1. barriers to access; 2. they are unsure whether they should or not; and 3. they have opted not to get it. While we can work to move the third group, most likely with limited success, the first two are important to focus on in that we may be able to shift their perceptions to accept the vaccine.
- **We need to work to remove all possible barriers to vaccination**, including: offering paid time off to recover: vaccination appointments on site at the workplace or a local doctors office or pharmacy, help in navigating the appointment system, childcare and ride vouchers if needed, vaccines for the whole family and straightforward

“Focus first on friendly messaging and making the vaccine easy and available to everyone who wants it. Take that as the first tactic. Then, if there is hesitation, find out what it is/ why it’s manifesting, and address it on a site-by-site basis.”

—Heidi Lawrence, Ph.D.

information about the vaccine. Once these access barriers are removed, focus on communicating with the unsure.

- **Help public health and healthcare officials make access to the vaccine as close to normal as possible** (tap into habits)—solving the challenge is as much about reducing barriers to access as it is about communication.
- **Our choices and behaviors are strongly affected by perceptions of what people like us are doing.** In this case, extensive news coverage of lower vaccination rates and low confidence among rural or conservative populations may create a paradoxical norm. Although many in these groups have been vaccinated or plan to be, the fact that hesitancy rates are higher in this group may create a perception that people like them are choosing not to get the vaccine.
- **Share messages and stories that connect to how people see themselves** (what they value, what gives them self-esteem, identities important to them, like former military service, father, and coworker).
 - For instance, when communicating with men consider how those you are communicating with think of themselves as men. If they're tough guys, you'll want to acknowledge vaccination as the strong thing to do. Frame it in terms of providing a protection role.
 - Avoid connecting politics or religion and the vaccine, especially in a work setting.
- **Frame messages to be about protecting family, making a commonsense choice, and being self-sufficient and responsible.**
 - Share messages that emphasize protecting oneself so they can provide and protect their family and coworkers as a responsible choice to make.
- **Don't assume you know the reason that someone hasn't gotten a vaccine.** For example, one might assume that a worker didn't get a vaccine because they made a deliberate choice not to, when in reality they were busy when

“(In)convenience and lack of resources can be a significant barrier to vaccine uptake. You should outline specific steps [to get vaccinated], and help with making action plans.”

—Anni Sternisko, M.A.

“In communications, employers should imply that most people do want to get the vaccine; the issue is time/information/accessibility. This also helps set a social norm that most people want to get the vaccine, not that the employer is trying to persuade all these people to get the vaccine.”

“If we can frame vaccine uptake as something you do to take care of people around you, this could increase vaccinations.”

—Sophia Pink, M.S.

“Don't focus on how it would be beneficial for the company but instead for what that person cares about: their family, community or co-workers, for example.”

—Jessica Schad, Ph.D.

WHY SOMEONE MAY BE HESITANT TO TAKE THE VACCINE

- Perceived loss of freedom
- Concerns over speed of vaccine development
- Individualistic worldview (we protect our own, individual liberty and choice is central to logic)
- Uncertainty (research suggests people fear uncertainty more than many things)
- Perceptions of masculinity and strength
- Lack of trust in institutions (government, media, medical)
- Low perceived risk of harm - do not think they are at risk from severe sickness or the disease did not significantly affect their families or network so far

vaccines were offered on site or haven't had time to book an appointment. It's important to remember that some have not gotten vaccinated because of logistical challenges, not because they don't want to get one.

- People have reasons to make the decisions that they do; therefore, **trying to change someone's mind may challenge the positive sense of self that their choices are consistent and rational**. This phenomenon is central to why it can be so hard to change behavior. Instead of striving to change someone's mind, focus on empowering them to use their critical thinking skills that may support revisiting decisions now that more information is available to them. They also may be encouraged to consider that getting a vaccine is actually consistent with their past choices and behavior, which have been to keep themselves and the people they care for safe.
- Looking at the seminal work of Amos Tversky and Daniel Kahneman, we know that **human cognition can be ascribed to two ways of processing information and making decisions**. "System 1" thinking is fast, automatic and can, on occasion, be moved by outside influences. "System 2" thinking is slow, deliberate and methodical.
 - These two ways of making decisions can describe why, at times, we may make choices against our own interests, when system 1 (our gut) outweighs system 2 (rational analysis).
 - System 1 thinking is less taxing and relies on preexisting schema or heuristics to make (faster) decisions. Knowing this, we can design messages and campaigns to either trigger system 1 responses that we wish to see, or activate a deeper system 2 analysis.
- **Effective messaging must rely on the existing relations between employer and employee**

- Whether or not employees have trust in their employers and their direct supervisors will have an impact on how open they are to COVID-19 messages coming from the employer. Employers must be realistic about the context they are communicating in and choose a strategy based on whether there is high trust or low trust among employees. Top down communication can work for high-trust workplaces, but low-trust workplaces will require strategies that ask vaccinated co-workers to share messages.
- **Incentives for getting the vaccine have to make sense.** For example, stickers and T-shirts might stir skepticism, but support like paid time off, transportation vouchers, bonus pay and credits for childcare make sense and show compassion for the workers' experience.
- **One-on-one conversations highlighted by the workers as most effective:**
 - Messages should be straightforward and positive/highlight the benefits of the vaccine and personal experience.
 - For those who have not received it yet, it may be because of political reasons and misinformation. Affirm you heard their perspective and offer resources that might provide them more or alternate detail. Recognize that people have information fatigue, so help guide them to better sources. Don't be patronizing or sanctimonious.
 - **MORE HELP:** *For a guide for these one-on-one conversations, see section 5 of this guide.*
- **Use personal stories of people who have gotten the vaccine,** as well as concrete and visual language to overcome abstractions and uncertainty.

“Testimonials that highlight positive post-vaccine experiences, this should be delivered through a local community leader or even one of their own.”

— Zhiye (Sherry) Jiang, M.A.

CASE STUDY:

“I knew who my die-hard people were; my die-hard rebellious ones, but the ones that were kind of, ‘Oh yeah, I don’t feel comfortable getting it.’ That left kind of a little openness to it. I shared a lot more stuff, ‘Hey this was how I felt when I got the vaccination, my first dose, my second dose, I got Pfizer.’

I was open to share that information: how I felt, some of the things that I’ve heard from others within my family who got the injections. And I think just helping them—this is vital—helping them to ease their mind

and to where they will actually come more on board to get to receive a vaccination...

Because we're seeing the stats on TV constantly about any side effects and everything, but for someone you're working with day-to-day every day, it's more important for us to share our experiences one-on-one with those individuals.

And I think that helps to get that extra percentage that's kind of on the fence over to get the vaccination. This helps them think ahead. Like maybe out of 15 people, (I) had like six who were saying they weren't going to get vaccinated. And of those six, two to three were really die-hard about not getting it. After getting the vaccination and talking to others about it, and being open about it, the ones that were kind of in between have gotten vaccinated."

- **Vaccinated supervisor at a chemical plant in Baton Rouge, Louisiana**

"For many people, getting the vaccine is exciting—it's a sign of hope for the future, it's something they've been waiting for, they take photos and share it with friends. There's no reason that this sign of hope wouldn't be the case for manufacturers. In marketing materials, it may be important to emphasize how this vaccine is a sign of hope, of getting back to normal."

—**Zhiye (Sherry) Jiang, M.A.**

- **Use positive emotions like joy, hope and relief** in the context of positive stories of people's vaccine experiences or of reconnecting to activities that are meaningful and important to them.
- **People are more likely to engage in an action if they perceive others like them do it.** Tell stories of workers who were once hesitant but have now made the choice to get vaccinated. Make changing one's mind and choosing to get a vaccine a norm among hesitant people.

On visual communications for vaccines

Signage in environment is important but must be paired with other interventions that support the desired behavior.

- A review of campaigns to increase healthy eating at workplaces found multiple factors were important and suggests that pairing signage with other interventions, such as on-site vaccinations or easy access to transportation, paid time off, etc.
- Signage was particularly important when

placed in strategic locations—e.g., where smokers congregated, break room, cafeterias, restrooms, etc.

Strategic use of visuals is important

- Visual representations can facilitate comprehension and recall of risk information better than text alone.
- Dual coding theory, for example, explains that visuals have an advantage over text because they are coded into both visual as well as verbal memory and are more easily retrieved from the brain because they are encoded more uniquely—making them more memorable.
- Shorter messages result in greater intention to be vaccinated.

When selecting images to use in messages, research suggests the following:

- The images you choose are important. When coding the way images show up in media, one study classified any image in which the needle took up more than 50% of the frame or was the focal point as negative and described such images as “may promote negative sentiments about vaccination.” Positive images (which “may promote positive sentiments about vaccination”) always had at least one person’s face in them (either a dialogue with a health provider or a visibly calm or happy person).
- PSAs featuring “real people” can result in greater intention to perform some behaviors. These PSAs should feel user-generated, in that they feel like they authentically reflect the lives and experiences of the messenger. When content comes from a community, it feels truer and more authentic.
- Pictures closely linked to written or spoken text can, when compared to text alone, markedly increase attention to and recall of health education information. Pictures can also improve comprehension when they show relationships among ideas or when they show spatial relationships. Emotional response to pictures affects whether they increase or decrease target behaviors. All patients can benefit, but patients with low literacy skills are especially likely to benefit. We recommend closely linking pictures to text/captions using simple language.

SECTION 4

SPECIFIC ACTIONS FOR BUILDING CONFIDENCE AND OVERCOMING BARRIERS

In this section, we have synthesized the research findings and offer potential solutions to test in your communities and facilities. While many working in this space are searching for the elusive perfect message to reach our inoculation goals, it is important to remember and acknowledge there is no “one size fits all” solution to this work.

What may work in one community and population may not be successful in another. We encourage you to approach this challenge in an iterative fashion and work to refresh your strategies with a great frequency, but all work toward your ultimate goal: protection of your workforce.

Need help with communication resources?

Download research-informed assets to use or customize in your community today. themanufacturinginstitute.org/research/thisisourshot

We encourage you to take the time to look deeply at who makes up the groups you are trying to reach and use the research and insights in this report to customize your efforts to them. (For good, county level insights, we appreciate [this resource](#) powered by the Surgo Ventures research and highlighted in the New York Times, if you do not have resources to do your own research work on hesitancy).

Here are our recommended tactics you might choose to explore for your vaccine communication work:

Make sure your communication falls into workers' habits and are visible in the environments where people work.

- Our work, and insights from behavioral economics, show that an effective way to change behavior without triggering a heavy cognitive load, is to create a series of environmental messages or reminders, called nudges. Nudge theory states that by positively reinforcing and providing indirect suggestions as ways to influence behavior or decisions may be better ways of accomplishing behavior change goals versus education, policy or enforcement.
- Nudges can help establish a norm or default behavior.
- Messages that are nudges are often paired where people exhibit a behavior. For example, placing recycling receptacles adjacent to trash cans can remind people about recycling; messages about conserving electricity may be placed adjacent to light switches or thermometers; or above urinals and on the back of bathroom/stall doors.

HOW YOU MIGHT EXECUTE

- Place posters and materials in locations that are highly trafficked or frequented daily, such as near entrances/exits, break rooms or restrooms
- Recognize that you may need a range of physical and digital assets. While in-plant posters and messages may be effective, you might need to supplement with messages on social platforms or text-based communication
- Change messages periodically (e.g., as plant vaccination goals are reached) to minimize content fatigue

HOW YOU MIGHT EXECUTE

- Conduct periodic vaccine drives at plants (a one-time event may not be as successful as multiple opportunities for the optional vaccine).
- Co-host near-by drives with local churches, civic groups and health boards; involve local doctors and medical professionals.
- Offer and support administrative assistance, through in-plant health office or plant's administrative services, to employees who may require help navigating a locality's vaccine registration systems.
- Make clear paid time off policies for getting the vaccine; if possible, alleviate concern of the opportunity cost of vaccine side effects (e.g., you will be supported and can afford time off if you are temporarily unwell) .
- Make sure communication is presented in a range of languages, especially reflecting your workers' primary languages.
- Extend vaccine drives to include workers' family members.

Work closely with local public health officials to reduce challenges for those who have not yet received a vaccine. Companies should remove barriers for employees who want the vaccine, including offering paid time off, vaccinations on site or work-hours appointments with nearby clinics, shots for the family, and access to information in their primary language, if they have questions.

- Establish multiple opportunities for workers to get a vaccine—both at work, at a trusted community location and through individual medical providers and services
- Friction points in getting the vaccine, which can be easy to overlook by those who do not have a worker's lived experience, could include the following:
 - Not having compensated time off to obtain the vaccine or worry about the opportunity cost of taking time off if they experience the short-term side effects of the vaccine.
 - Navigating the systems to locate or make appointments for vaccines online or in other settings, particularly if digital systems or English are not native to the worker
 - Struggling with transportation to obtain the vaccine, particularly if the location to receive the vaccine is not part of their daily habits or on their normal commute (particularly if workers rely on public transportation)
 - Wanting to make health decisions, and receive services, outside the work environment or do not wanting their employer to have access to their health information
 - Not having access to care for their family while they are receiving or potentially recuperating from the vaccine

Connect the larger public health goals (striving toward herd immunity) to the immediate community (e.g., the shop/factory, surrounding area, etc.)

- Many of those remaining who have not secured the inoculation may have an individualistic worldview and appealing to prosocial behavior (e.g., the greater good for the region/nation/world) may not be very effective. Instead, connect more closely with the individuals' own networks and directly experienced sense of community.
- Shift the goals from more abstract to the local level (e.g., getting to 80-90% inoculated workers at the plant by a certain date versus getting to “herd immunity”). By connecting reminders and actions in their immediate environment, those who are resistant may be more willing to act.
- Connect the goals you set to a series of “nudge messages”: positively reinforcing, actionable reminders to adopt a behavior. Nudges on how a simple action contributes to the larger goal have been shown to move individualistic community members to being more willing to get the vaccine.
- Frame the collective protection of the vaccine as a matter of pride—pride in the plant, local community or other salient identity that the individuals in the community may have.
- Local experts are better than distant ones. Connect community-based health leaders and advocates in the work that you do.

HOW YOU MIGHT EXECUTE

- Establish a plant/location goal connected to a visible metric and celebrate the collective. For example, a public thermometer of the percentage of the workforce who have been inoculated, updated at regular intervals. When a goal is reached, organize a public celebration.
- Feature stories of trusted individuals who share why they chose to complete their inoculation cycle.
- Work with local health officials to create opportunities for workers and their families to become inoculated at the same time
- If feasible, offer a plant-wide incentive (bonus, lunch, paid time away, lottery, raffle, etc.) if a local goal is reached.
- Count on supervisors and team leaders as messengers, in conjunction with local health leaders, in group and one-on-one communications (for help, see guide to individual conversations in section 5)

HOW YOU MIGHT EXECUTE

- Establish regular communication channels about the relationship between your operations and vaccination efforts. What will change in the work environment when your benchmark is reached?
- Share why your organization is providing information on vaccination. Protection of the workforce? Protection of the local community?
- Be transparent on what sources you are using and why you are using them. Be explicit in why you chose that source; don't assume that everyone is as familiar with the credibility and discovery process of the source, so add context. When possible, have a trusted local authority affirm the source you've chosen.
- Pair scientific information on the safety and effectiveness of the vaccine and information regarding when and where to receive the vaccine with experiences of local trusted individuals.

Be transparent with motivations for why the organization is communicating about the vaccine.

- Be explicit why your organization is engaging in efforts on the vaccine. Share your motivations for using the data and sources you do and try to connect those with the immediate community.

“Well, anybody who’s paying attention, the science is different depending upon who you’re listening to or who you’re talking to. So, some of it’s 180 degrees from what you heard previously. So, I personally think they’re kind of wearing out that term. Maybe it’s better to say, based on the experts that we’re talking to, this is what we’re presenting. Because a lot of times the experts who I see in videos, I could find another video that completely contradicts that. So, it makes me a little bit more apprehensive of the management team that’s introducing this stuff as to why they choose the experts that they chose and not someone else. So I don’t want to say I don’t trust them, but I don’t necessarily trust 100% their sources.”

—Unvaccinated worker from rural Illinois

Mothers largely make medical decisions for their family. Work directly with the mothers in the community to help increase vaccine uptake, at all eligible ages.

- In a survey of 9,218 respondents in five countries (including the United States), 59% of women reported making healthcare decisions for others. In addition, 94% of working moms with children under age 18 make healthcare decisions for others and have fittingly been named “chief medical officers (CMOs) of the family.” These women are worthy of health campaign attention as they “set the health and wellness agenda for themselves and others.”
- Mothers do approximately 80% of the health care related decision making for children according to the U.S. Department of Labor.

HOW YOU MIGHT EXECUTE

- Activate the mothers in the workforce and provide them information they seek to make the vaccination decision for their families. Co-host a family vaccination event with health officials.
- Look for opportunities to connect with mothers in the community or workforce network (e.g. spouses, extended family) and provide them information and assistance. This can be mailers to the home, events designed for mothers, etc.
- Facilitate mom-to-mom conversations, forum or chats.
- Partner with schools or school districts to disseminate information through school materials. You could tap into back-to-school season to encourage the whole family to get vaccinated (many local back-to-school drives provide school supplies; this may be an opportunity to offer vaccines).

HOW YOU MIGHT EXECUTE

- Connect your understanding of the community makeup to your format choices. Have a predominantly male and conservative community? Use a male voice. For other groups, a diverse set of voices and stories will help.
- For some male audiences risk-taking behaviors are appealing. Don't frame messages of non-vaccination as "risky" (e.g. you are putting your health, others at risk) as that may trigger the risk-taking behavior. Rather, a "protect" frame may be more effective.
- Experiment with messages that connect greater sense of strength and virility with protecting self through the vaccine. For example, using environmental nudges, a campaign of above-urinal signs could share research on observed cases of erectile dysfunction connected post-COVID-19 infection and how men can get the vaccine.

The use of gendered messaging and implementation in COVID vaccination messaging should be made with audiences' political ideologies, as well as genders, in mind.

- In their review of fear and gender, McLean and Anderson (2009) discuss how fear is more commonly associated with femininity than with masculinity. This finding could have important ramifications on vaccine messaging in that fear-based messaging may not be well-received by those men with traditional notions of masculinity. Indeed, a meta-analysis revealed that the effectiveness of fear appeals was found to be more effective among the female identifying group of the study sample (Tannenbaum et al., 2015).
- In his analysis of men's health behaviors and the role of masculinity, Courtenay (2000) summarizes the literature by stating that when men are dismissive of health-related needs and inclined towards risk-taking, they "legitimize themselves as the 'stronger' sex." These detrimental health decisions can ultimately foster the continuation of bad health habits among men who are in keeping with societal notions of masculinity (Courtenay, 2000).
- In an experiment with 1,200 participants, viewing an educational video about how COVID-19 mRNA vaccines work with a male voiceover (versus a female voiceover, subjects not viewing the video, or solely reading the video transcript) was found to be positively associated with vaccination intent. Interestingly, viewing the female-narrated version of the video had a bit of a backfire effect for political conservatives. For these viewers, the female-narrated video "seemed to decrease the propensity of getting to a yes response ... for the vaccine when compared to political conservatives who viewed the male narrated video and even the control group." Outside of this group of conservative viewers, both the female- and male-narrated videos were similarly related to increasing vaccine intention (Witus & Larson, 2021).

Translate to the communities you are trying to reach—this includes not only the dominant language, but the words and images you choose.

- If workers in your facility speak languages other than English, create materials in those languages. Even for those who use English every day, seeing calls to action in their first language will help them feel seen and acknowledged.
- Ensure diversity in images and stories, regardless of language (e.g. don't only feature Latinx workers in Spanish-language efforts)
- Recognize that you may need a range of physical and digital assets. While in-plant posters and messages may be effective, you might need to supplement with messages on social platforms or text-based communication. Optimize digital communications for viewing on mobile phones.

Be prepared to facilitate one-on-one communications between those who aren't sure and people they trust (managers, peers, etc.)

- It's important to recognize that every team member is a messenger, so it may be helpful to provide training to managers and employee advocates and leaders about how to talk with their colleagues about vaccination.
- **MORE HELP:** *For a guide for these one-on-one conversations, see section 5 of this guide.*

HOW YOU MIGHT EXECUTE

- Offer access to bilingual healthcare workers at vaccination drives.
- Identify bilingual supervisors and workers who can review in-language materials for accuracy and cultural nuance.
- Provide in-language information during meetings and other in-person interactions—not only in printed materials.
- Include translated versions of resources (e.g. vaccination appointment websites) on translated materials. For example, if you're sending an email in Spanish about vaccination appointments, make sure any linked websites or resources are also in Spanish.

SECTION 5

A GUIDE TO HELP COMMUNICATE ABOUT THE VACCINE WITH ANOTHER PERSON

One of the best ways to help people gain the information and confidence they need to accept the vaccine is a one-on-one conversation with someone that they trust. In scholarship this is identified as “motivational interviews.” Motivational interviewing can strengthen a willingness to act by helping individuals identify their own reasons for doing so.

This technique has been shown to work in a number of experiences and identities. A recent example, highlighted by public scholar Adam Grant, chronicles the techniques of “vaccine whisperer” Arnaud Gagneur, a pediatrician who has increased vaccine confidence among mothers by using this technique in the maternity ward.

Motivational interviewing is not an act of manipulation. It is designed to help people analyze and articulate ideas and goals they work to set for themselves. Motivational interviewing requires strong listening skills, respect

and sincere curiosity. The technique is most effective when people are ambivalent or don’t see getting a vaccine as especially important.

Critically, this technique should not be used to argue, berate, win or debunk—those approaches can backfire and leave someone even more determined to stick to their original choice.

Here are some potential conversation paths for your one-on-one conversations that draw on what we learned through our projects on vaccine hesitancy.

“My choice is my business, and no one has a right to know.”

You might reply...	You could ask...	You might close by saying...
<p>“Yes, it is important that medical issues are kept private for those like you who want it that way.”</p> <p>“Choosing to get a vaccine certainly is a personal choice. I chose to get it because I read the science and believe it will allow us to get back to normal and hang out with my family again without fear.”</p>	<p>“Would you be interested in a more private way to get your vaccine?”</p> <p>“Would you like to know more about the vaccine and how to find a place to receive the inoculation? I am happy to share what I know.”</p>	<p>“Lots of people have chosen to get the vaccine. It was the right choice for them. If you are interested there are ways you can privately access the vaccine. Your doctor’s office could be a good place to ask about that option.”</p>

“I’ve already had COVID-19, and so I am already immune.”

You might reply...	You could ask...	You might close by saying...
<p>“I am sorry to hear that. What was your experience with it like? Any lasting effects?”</p>	<p>“Have you seen new studies showing that immunity from having COVID-19 only lasts for months? These studies show people can get it again. Studies are showing that the protections by vaccination last much longer, and if a booster is needed, health officials are making plans for how to facilitate those doses.”</p>	<p>“Other workers who have had COVID-19 decided to get a vaccine to protect themselves from that happening again. And good news from some of the new research is that those who had the disease AND got vaccinated are even more protected than those who just received the vaccine.”</p>

“I’m going to wait and see.”

You might reply...	You could ask...	You might close by saying...
<p>“I can understand that. There is a lot of uncertainty right now. While the vaccine is approved for ‘emergency use,’ there is still the same robust science and research behind it as your other medicines.”</p>	<p>“You know how government and bureaucracies love paperwork and take forever to do things? There are a lot of people working together to do that process very quickly to save lives with this vaccine.”</p>	<p>“Moderna, one of the vaccine makers, is applying for full approval right now. The others aren’t far behind and every day more research shows the effectiveness of the vaccine. Can I show you how you can protect yourself?”</p>

“The vaccine just appeared so quickly. It doesn’t seem like they had enough time to test it.”

You might reply...	You could ask...	You might close by saying...
<p>“It was fast. It’s kind of amazing that we live in this historic moment where things like this are possible and the vaccines became available as quickly as they did. The existing vaccine and other science available—and the whole world working on it—certainly helped us create this effective vaccine quickly.”</p>	<p>“Have you seen the reports that scientists are now applying mRNA technology, like Pfizer’s vaccine, to inoculating against other diseases like AIDS and the flu? Or that we’ve been using vector-based vaccines, like Johnson and Johnson’s, for years to protect against a range of diseases?”</p>	<p>“Do you know that you can talk to our health clinic or your doctor about the COVID-19 vaccines? They have office hours or you can send them an email. Talking to an expert might help you get your question answered.”</p>

“I don’t want to be a guinea pig.”

You might reply...	You could ask...	You might close by saying...
<p>“Yes, that is understandable, I don’t want to be either, but now that more than 168 million people in the U.S. have safely received the vaccine and we can see that it is effective, I am excited to get the vaccine.”</p> <p>“The U.S. FDA grants Emergency Use Authorization after review of rigorous testing. Not only does the FDA grant the initial authorization, but the FDA and CDC share the responsibility of actively monitoring the medicine works for nearly everyone.”</p>	<p>“For decades, America has made what it needed. We made these vaccines to help us make a better America in which we can all live free from fear and return to the things that matter most.</p> <p>Did you know nearly XXXX many people in our town/ county/state have already taken the vaccine? This is working in/for our community.”</p>	<p>“The vaccines may seem like they were developed quickly, but they were built off of existing vaccine ingredients and technologies that have already been through rigorous clinical trials.”</p>

“Putting a foreign substance in my body just doesn’t seem natural.”

You might reply...	You could ask...	You might close by saying...
<p>“I can see how it could feel weird to put a new vaccine into your arm. It can be scary. When I think about it, I don’t always know what’s in all the medicine I take, but I trust the science and the millions of medical professionals who have taken it and inoculated their families.”</p>	<p>“Did you know the vaccine is actually built off of other vaccines that have been around for a long time that naturally build up our antibodies to protect us if we ever come face to face with COVID-19?”</p>	<p>“Vaccines will greatly increase your chances of not getting a case of COVID-19. The virus can do long term damage to your body. Have you heard of the cases of people with long haul COVID-19?”</p>

“I’m worried about side effects, or that getting the vaccine will be worse than getting COVID-19.”

You might reply...	You could ask...	You might close by saying...
<p>“Yes, some people do experience side effects from COVID-19 vaccines. They might range from nothing to temporary symptoms that are like the flu. But, you have had the flu before and you were able to get through that. This at worst may be one or two days of that.”</p> <p>“The side effects of the COVID-19 vaccine, whether they are mild or not, show that your body is practicing by building up antibodies to prevent serious illness from COVID-19 in the future. You feel sick for a day or two but it’s worth it to have peace of mind after!”</p>	<p>“I made a plan to deal with my side effects. I made sure to have Tylenol and childcare ready if I needed it. May I help you develop a plan for dealing with side effects that you might experience?”</p> <p>“Yes, for some folks the side effects from the vaccine do make people ill for a day or two. But could you imagine how much time it would take to recover from COVID, particularly if you had to be hospitalized? Who might care for your family then?”</p>	<p>“Most people have mild side effects, such as a headache, experience a sore arm, or get really tired. Having a plan for how to deal with them could be useful.”</p> <p>“You’re someone who considers evidence and makes the best decisions for yourself and those you love. You might feel sick for a few days, but then you will get to feel relief knowing you can safely be with your friends, family, and coworkers again.”</p>

“I’m not getting the vaccine unless they make me.”

You might reply...	You could ask...	You might close by saying...
<p>“I hear you. I do not like being told what to do by anyone.”</p>	<p>“I don’t know if it will be mandated—there are a lot of good reasons for and against that directive. But I got it so my friends, family and coworkers can feel safe around me.”</p>	<p>“We have now seen that the vaccines are showing significant positive outcomes with very few side effects. Here’s some information that is available on the importance of vaccines. Thank you so much for considering the vaccination.”</p>

“I’m worried that getting the COVID-19 vaccine will make it hard to get pregnant or hurt my child.”

You might reply...	You could ask...	You might close by saying...
<p>“I know that making the right decision to protect you and your future child is important to you. Mothers who have chosen to get the vaccine have found that it protects them and even their new babies.”</p>	<p>“Have you seen the recent studies that show that women who are pregnant are at higher risk for complications if they get COVID-19?</p> <p>“Have you seen the studies that show the vaccine poses no risk to women pregnant, wanting to be pregnant or breastfeeding? In fact, they even found benefits to the baby. Babies whose mothers were vaccinated are born with the antibodies to protect them from COVID.”</p>	<p>“You could talk to your doctor about concerns you may have.”</p>

“I don’t know who to trust for information. The media and government seem to be blowing this out of proportion.”

You might reply...	You could ask...	You might close by saying...
“Yeah, finding information you can trust can be hard these days. It seems the politicians and cable news just want to shout each other down and win either power or ratings.”	“What information are you seeking that you are having trouble trusting? Do you mean in terms of the death toll or the cases of long haul COVID-19? The benefits of vaccination?”	“I consider who I trust very carefully. I’ve done a lot of reading on this topic and I trust organizations that are non-partisan that I’ve found that stick to the facts, such as the CDC and FDA. Locally, I trust my doctor as well. My doctor also agrees with what the CDC and FDA are saying regarding the safety of the vaccines.”

Some other things to keep in mind as you hold these one-on-one conversations:

- Listen and acknowledge you heard their perspective.
- Acknowledge that public health officials have made mistakes—in this pandemic and previous medical interventions with many communities (e.g. discriminatory practices of under-represented groups, etc.).
- Be transparent about what you do and don’t know. Offer to share sources related to questions they have that you can’t answer.
- While it’s important to listen compassionately to people’s concerns, do not repeat misinformation. Pivot to positive examples quickly, before they can repeat themselves. If they cite one sad story, acknowledge the sad story and also cite positive ones that are equally compelling.
- Stay calm and do not react to defensiveness. If someone is being defensive it means they feel like you are talking down to them. Tell them you did not mean to offend them, and that you do not mean any disrespect.
- Show your respect for their perspective and expertise. Avoid being patronizing, judgmental and condescending. No finger wagging.
- If you know this person well, connect getting the vaccines to their personal goals (e.g. going on a trip, having a big family dinner) or their identity (e.g. as someone who considers evidence in their decision making, a parent making common sense decisions for their kids, or someone who wants to make their own health decisions.)

SECTION 6

MESSAGES

Based on the insights we gained through our interviews with manufacturing workers and experts in the field, we developed messages and tested them with a sample of 435 U.S. adults self-identifying as front-line or production line workers (“floor workers”) in the manufacturing industry.

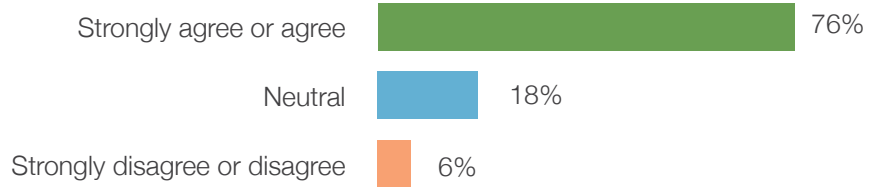
This survey asks about the COVID-19 vaccine among front-line manufacturing workers using a quota sample of this population that mirrors the diverse makeup of the people who work in manufacturing, and taking into consideration gender, geography, race, income, education and age of this population. The aim of this survey was to understand the views of people who work in manufacturing about COVID-19 vaccines, and, for some of them, their uncertainty about getting vaccinated. The survey sample was composed of respondents who closely matched the demographics of the estimated population working in manufacturing in early 2021. The survey asked a series of demographic and psychographic questions and explored a wide range of areas, including media use, trust in employers, employer communications,

and previous experience with COVID-19, before respondents saw a series of messages.

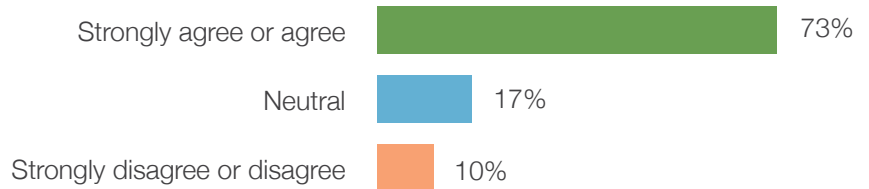
METHODOLOGY: Data for this survey was collected using Qualtrics panels employing a quota sampling method (a non-probability sampling technique). Four hundred and thirty-five respondents qualified and completed the survey while it was in the field (May 1 to May 19, 2021). The survey collected 3,742 responses, most of whom did not qualify for the survey, and other participants were removed for reasons regarding data quality. Before the survey, we reviewed the messages with the participating scholars to ensure that they reflected the research insights, and then added them to the survey to see which performed the highest, and which didn't seem to connect.

CHART 1: STRONGEST GENERAL APPEAL MESSAGES FOR ALL RESPONDENTS

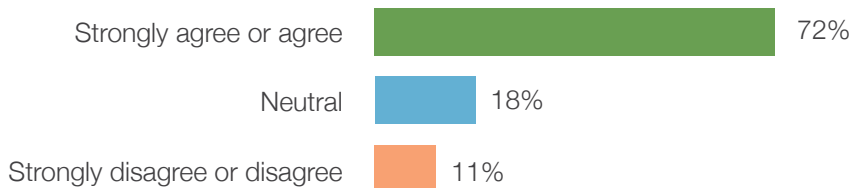
“People should have a personal choice regarding whether to take a COVID-19 vaccine.”



“Vaccination is a collective action to prevent the spread of diseases.”



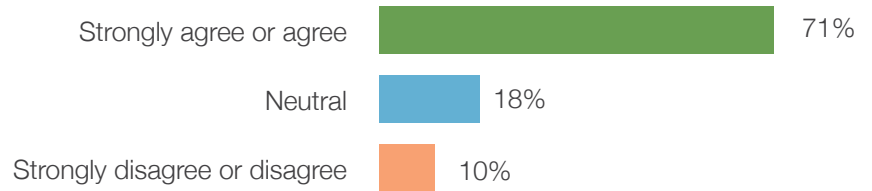
“During the COVID-19 crisis, manufacturing got harder, people lost jobs and manufacturers and people couldn’t get the critical things they needed. COVID-19 vaccines give us a chance to get back on track.”



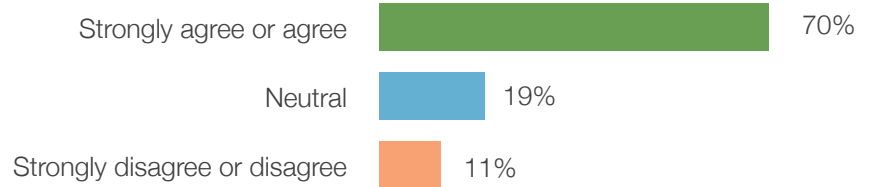
The survey resulted in the following breakdown of completed responses from people who work in the following settings: 100% said they self-identified as a front-line or production line worker (“floor worker”) who works in the manufacturing industry. They were asked which of the following describes the manufacturing facility they worked in: general manufacturing facility 34.5%; warehouse/distribution services 27.2%; telecoms/data hosting 7%; not employed right now 4.9%; refrigeration/cold storage 2.8%; other 23.7%. Whether they were considered an “essential worker”: Yes 78%, no 15%, 6% unsure. Race/ethnicity: Black (non-Hispanic) 9.4%; Latinx or Hispanic 15.6%; white (non-Hispanic) 69.2%; Asian 5.6%; other 0.5%. Gender: Female 29.9%; Male 66.9%; Self described as or prefer not to say 3.2%. Geographic location: Northeast 14.5%; Midwest 31.5%; South 34.7%; West 19.3%.

NOTES: All percentages rounded from decimals and totals may not equal 100% due to rounding. Percentage points are rounded to the nearest whole number or decimal place. Percentages below 0.50% were rounded down and those that were 0.50% or above were rounded up (e.g., after rounding, 6.49% = 6% and 6.51% = 7%).

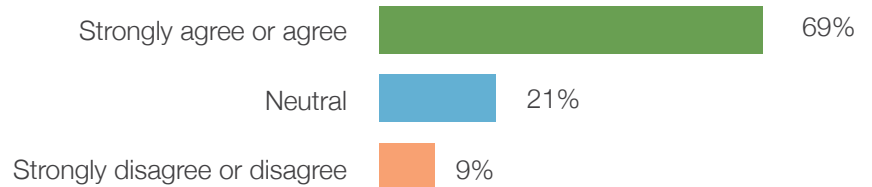
“The COVID-19 vaccine provides a pathway towards getting back to normal and reopening the economy.”



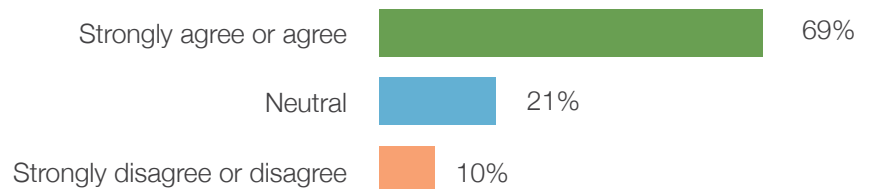
“COVID-19 vaccines are effective.”



“Vaccines are effective at preventing populations from being affected by disease (e.g. polio) and have saved many human lives around the world, therefore taking a COVID-19 vaccine would also save lives.”



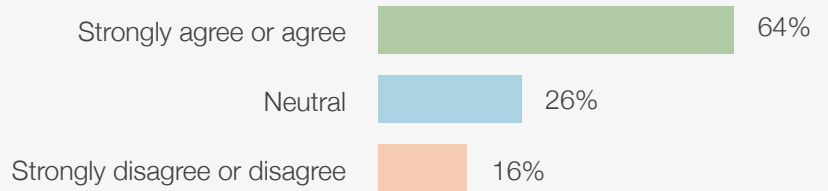
“Getting simple instructions from my employer about how to access a vaccine would be helpful and valuable. This would allow us to gather socially at work without fear of being infected with COVID-19.”



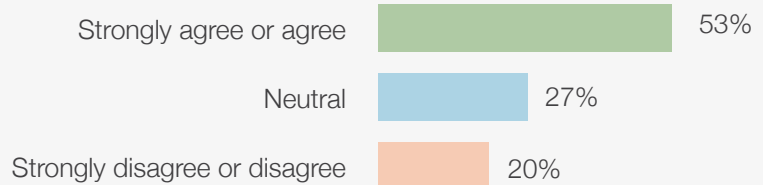
NOTES: All percentages rounded from decimals and totals may not equal 100% due to rounding. Percentage points are rounded to the nearest whole number or decimal place. Percentages below 0.50% were rounded down and those that were 0.50% or above were rounded up (e.g., after rounding, 6.49% = 6% and 6.51% = 7%).

MESSAGES THAT WERE NOT AS STRONG AMONG ALL RESPONDENTS

“We should make sure everyone takes a COVID-19 vaccine to protect everyone from the virus.”



“I would be more likely to get the COVID-19 vaccine if I could do so in private and be in control of who knew I had received it.”



“Taking a COVID-19 vaccine should be mandatory for everyone in the U.S.”

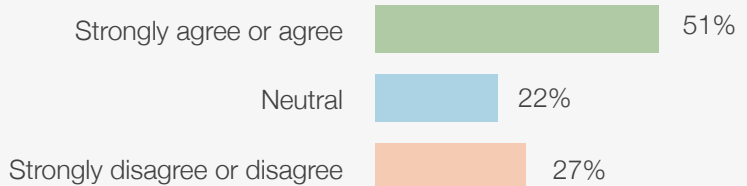
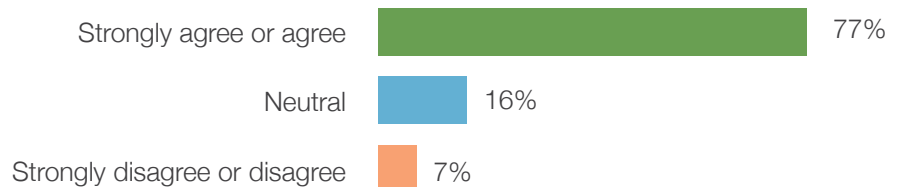


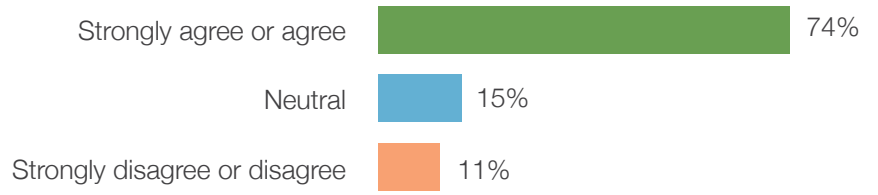
CHART 2: STRONGEST AND WEAKEST INDIVIDUAL APPEAL MESSAGES TO GET THE VACCINE

Messages that emphasize personal choice and appeal to their protection of vulnerable people, friends, and family were much more meaningful than messages that emphasized the influence of others on their decision making or getting a vaccine in private.

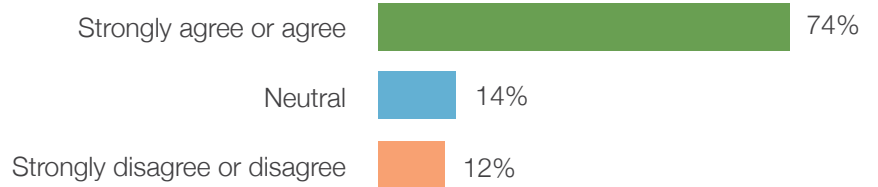
“My choice to get vaccinated with a COVID-19 vaccine will be my own and will not be influenced by what people around me choose.”



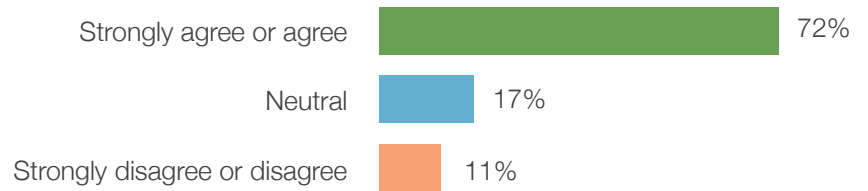
“I take my role in protecting and caring for my family seriously, and getting myself vaccinated for COVID-19 is part of that.”



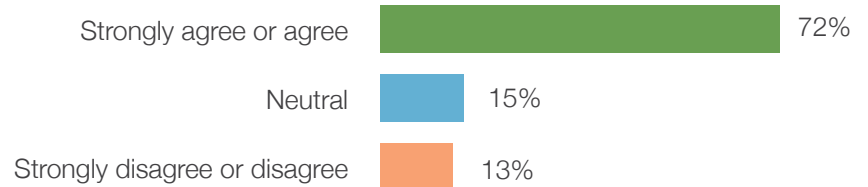
“It’s my job to protect my family and the people around me. Getting the COVID-19 vaccine is one way to do that.”



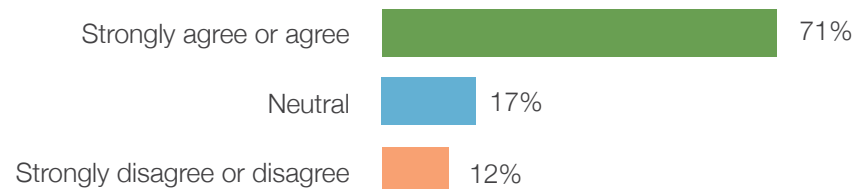
“I choose to get a COVID-19 vaccine to protect people who I might spread it to who might be more likely to get sick and die.”



“I would get vaccinated for COVID-19 because I can also protect people with a weak immune system.”

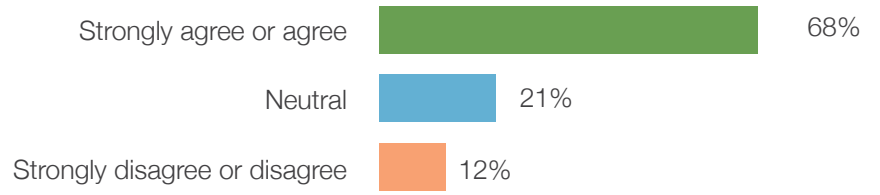


“On our shop floor, safety is essential. Getting a COVID-19 vaccine is doing my part to keep myself and everyone else safe.”



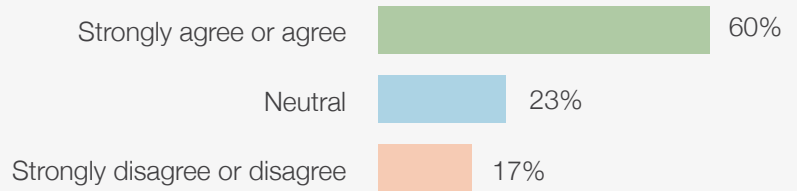
NOTES: All percentages rounded from decimals and totals may not equal 100% due to rounding. Percentage points are rounded to the nearest whole number or decimal place. Percentages below 0.50% were rounded down and those that were 0.50% or above were rounded up (e.g., after rounding, 6.49% = 6% and 6.51% = 7%).

“As a worker in manufacturing, I am proud of what I make here in America. I am also proud of the fact that the COVID-19 vaccines are made in America too. I am also proud to get a COVID-19 vaccine.”



MESSAGES THAT WERE NOT AS STRONG AS INDIVIDUAL APPEALS

“Hearing from other people about their vaccination for COVID-19 experience makes me feel more comfortable about getting vaccinated.”



“I would be more likely to get the COVID-19 vaccine if I could do so in private and be in control of who knew I had received it.”

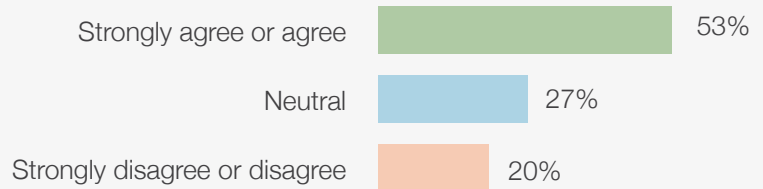
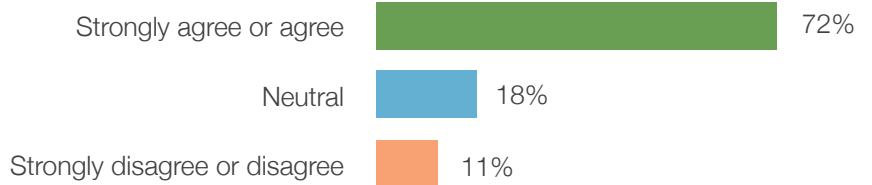


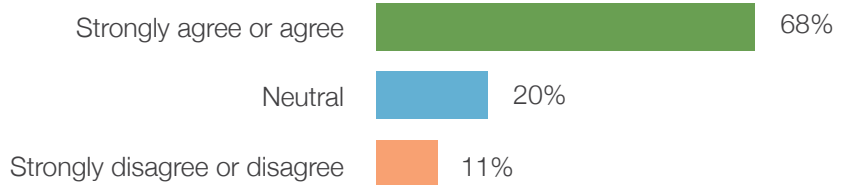
CHART 3: MESSAGES WITH APPEAL TO MANUFACTURING’S ROLE PERFORMED WELL

A theme that emerged from the interviews with shop floor manufacturing workers who are vaccine confident and those who are hesitant is that they see the importance of their work. Messages that appeal to the importance of manufacturing to vaccine production and to building things in America performed well.

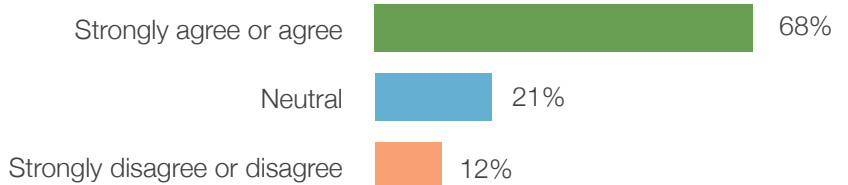
“During the COVID crisis, manufacturing got harder, people lost jobs and manufacturers and people couldn’t get the critical things they needed. COVID-19 vaccines give us a chance to get back on track.”



“For decades, America has made what it needed. We made these COVID-19 vaccines to help us make a better America in which we can all live free from fear and return to the things that matter most.”



“As a worker in manufacturing, I am proud of what I make here in America. I am also proud of the fact that the COVID-19 vaccines are made in America too. I am also proud to get a COVID-19 vaccine.”



“Manufacturing played a leading role helping the US win WWII. The COVID-19 vaccines are similar in that American manufacturing sector is making them, and they will lead us out of this pandemic and allow America to rebuild better.”

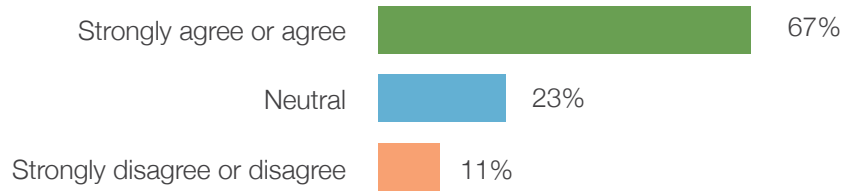
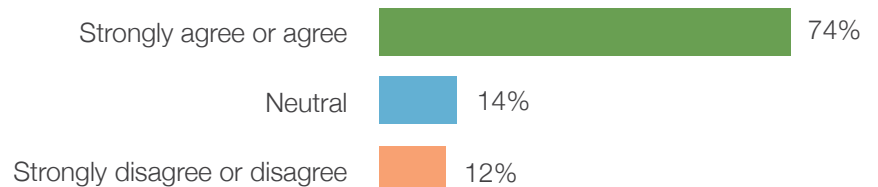


CHART 4: STRONG AND WEAK MESSAGES FOR THE VACCINE HESITANT

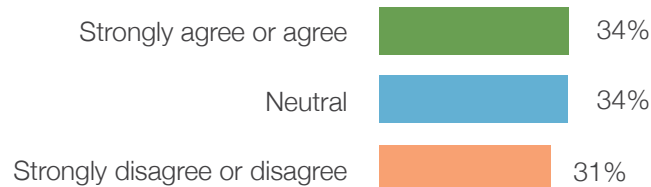
Among those who are not planning to get a vaccine, messages that appeal to personal choice, information from local sources, vaccination as a collective effort, manufacturing specific safety, and regret for a failure to vaccinate one’s child performed well. Messages about mandates, general safety (especially without any explanation), the influence of people like them and vague affirmations did not resonate.

For those who are vaccine hesitant, it’s essential to create opportunities to address their concerns, make space for personal choice and appeal to their identity as protectors of family and the vulnerable.

“People should have a personal choice regarding whether to take a COVID-19 vaccine”

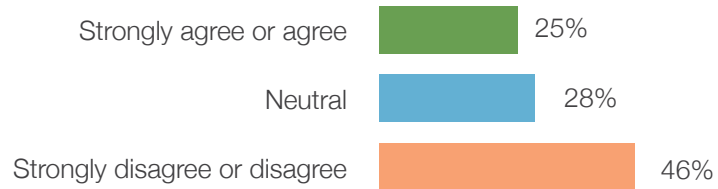


“I want information on a COVID-19 vaccine from people from my community rather than distant experts.”

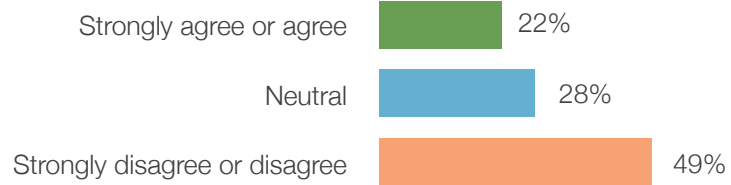


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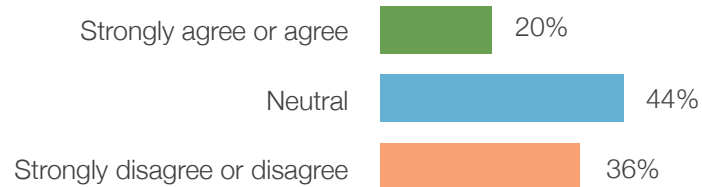
“Vaccination is a collective action to prevent the spread of diseases.”



“On our shop floor, safety is essential. Getting a COVID-19 vaccine is doing my part to keep myself and everyone else safe.”

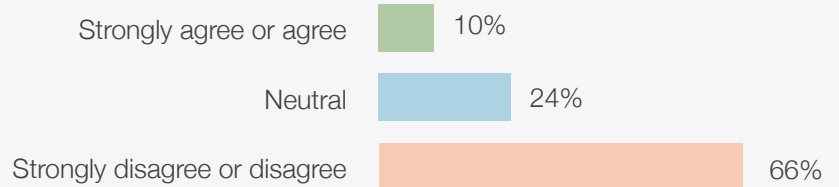


“If I chose not to have my child vaccinated with a COVID-19 vaccine, and they become ill, I would feel regret.”

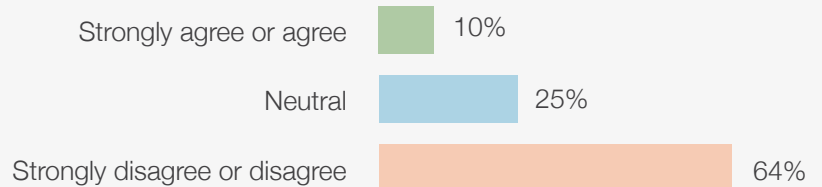


MESSAGES THAT WERE NOT AS STRONG AMONG VACCINE HESITANT

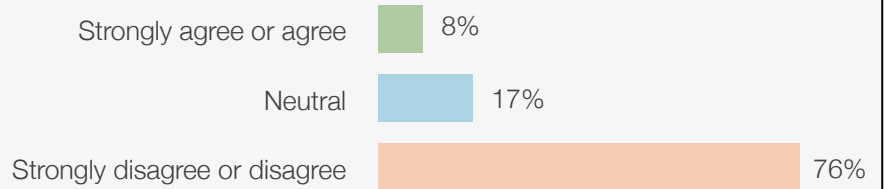
“I would be more likely to get the COVID-19 vaccine if I could do so in private and be in control of who knew I had received it.”



“Hearing from other people about their vaccination for COVID-19 experience makes me feel more comfortable about getting vaccinated.”



“Taking a COVID-19 vaccine should be mandatory for everyone in the USA.”



NOTES: Sixty-seven respondents are classified in the “vaccine unsure” sample—15% of total sample. The same general and messages above were among the most popular with this group as well. All percentages rounded from decimals and totals may not equal 100% due to rounding. Percentage points are rounded to the nearest whole number or decimal place. Percentages below 0.50% were rounded down and those that were 0.50% or above were rounded up (e.g., after rounding, 6.49% = 6% and 6.51% = 7%).

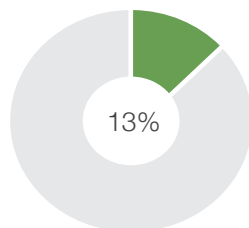
In this survey, we asked the following question to determine if someone was unsure about getting a COVID-19 vaccine: “Please read the following sentence and indicate your agreement or disagreement: If a vaccine for COVID-19 were available to me and cost nothing, I would get it.”

Respondents choosing “Strongly agree, Agree or Somewhat agree” were considered vaccine confident (vaccine confident sample 79% of total sample). Respondents choosing “Strongly disagree, Disagree, or Somewhat disagreed” were considered vaccine unsure (vaccine unsure sample 15% of total sample). Sixty-seven respondents were in the vaccine unsure sample, which was 15% of the total sample. The results in this chart are the strongest scoring messages for the vaccine unsure sample.

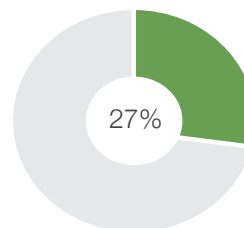
CHART 5: WHICH INCENTIVES ARE MOST MEANINGFUL?

Respondents were asked to check “all that apply” in identifying trusted sources for advice about taking COVID-19 vaccines. Local health experts are among the most trusted resources among all respondents. Federal government agencies scored low on trust for those who are vaccine hesitant/unsure.

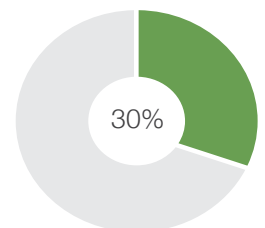
Paid time off before and after getting the shot.



'Vaccine Unsure'

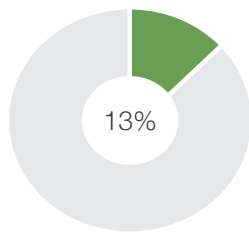


Total Sample

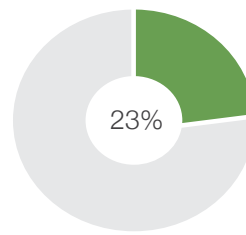


'Vaccine Confident'

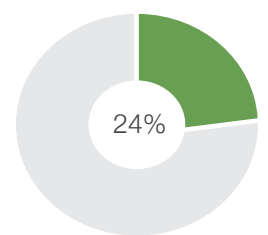
Gift cards or small monetary payments.



'Vaccine Unsure'

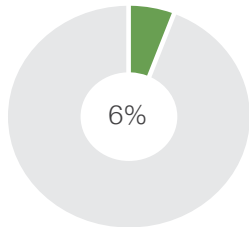


Total Sample

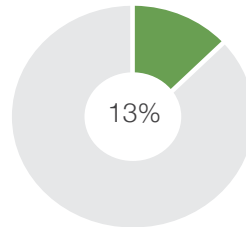


'Vaccine Confident'

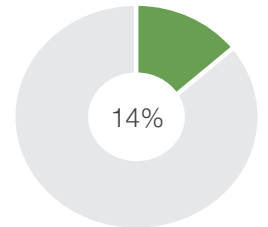
“A raffle for a chance to win a large sum of money or a new car.”



'Vaccine Unsure'

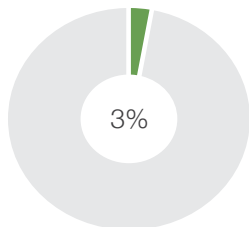


Total Sample

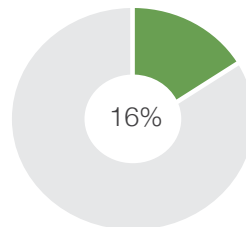


'Vaccine Confident'

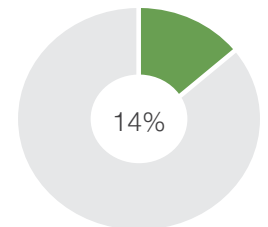
“Public acknowledgment for the work I do.”



'Vaccine Unsure'

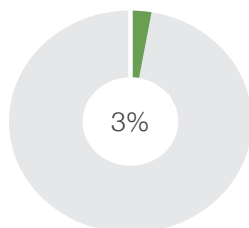


Total Sample

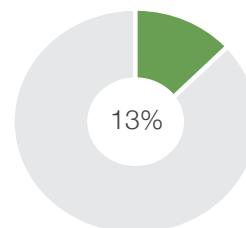


'Vaccine Confident'

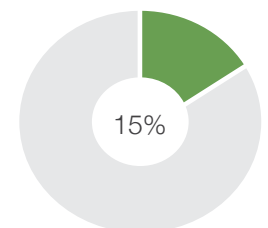
Providing transportation to a vaccine site or offering the shots where I work.



'Vaccine Unsure'



Total Sample

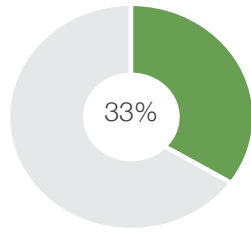


'Vaccine Confident'

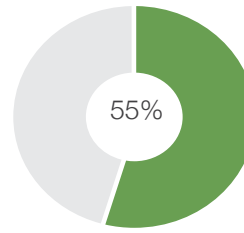
NOTES: Sixty-seven respondents were in the vaccine unsure sample—which was 15% of the total sample. The vaccine confident sample included 368. The total sample included 435. All percentages rounded from decimals and totals may not equal 100% due to rounding. Percentage points are rounded to the nearest whole number or decimal place. Percentages below 0.50% were rounded down and those that were 0.50% or above were rounded up (e.g., after rounding, 6.49% = 6% and 6.51% = 7%).

*Most of those in the “other” category for the vaccine unsure sample said “nothing” would incentivize them, and some were pretty angry about this question. “Nothing will get me to put that junk in my body” “None because when faced with death money does not matter, or a car.” “It will kill more people than the virus.” “NOTHING YOU OR ANYONE WILL OFFER ME WOULD MAKE ME TAKE THIS FARSE [sic] OF A VACCINE.” “I can’t be bribed into getting it.”

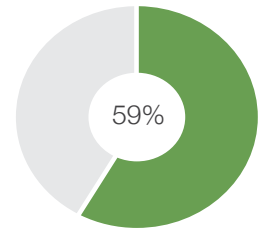
“This question does not apply to me as regardless of incentives I’m going to get it or have already got it.”



'Vaccine Unsure'

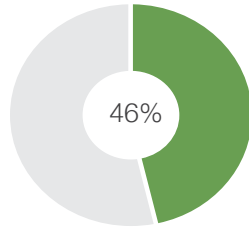


Total Sample

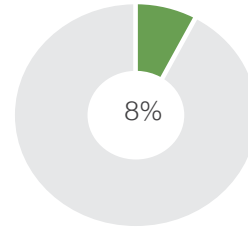


'Vaccine Confident'

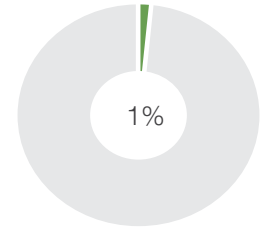
Other
(most choosing the 'other' category wanted to know more about safety and side effects)



'Vaccine Unsure'



Total Sample



'Vaccine Confident'

CHART 6: WHO DO RESPONDENTS TRUST FOR ADVICE ABOUT TAKING COVID-19 VACCINES?

Respondents were asked to check “all that apply” in identifying trusted sources for advice about taking COVID-19 vaccines. Local health experts are among the most trusted resources among all respondents. Federal government agencies scored low on trust for those who are vaccine hesitant/unsure.

Among total sample:

MOST TRUSTED

- 41% U.S. Centers for Disease Control and Prevention
- 40% Local health-care professionals (your nurses and doctors)
- 38% “My family”
- 36% U.S. Food and Drug Administration
- 29% My closest friends
- 23% My employer (near middle of list of 19 options)

LESS TRUSTED

- 11% Local non-governmental organizations (NGOs)
- 10% Leaders of groups of which you are a member or belong
- 7% Celebrities I like

Among 'vaccine hesitant' sample:

MOST TRUSTED

60%	"My family"
40%	"My closest friends"
25%	Local health-care professional (your nurse or doctor)
25%	"My church leaders"
12%	My employer

LESS TRUSTED

1%	Federal government agencies responsible for monitoring safety of vaccines
1%	My local government leaders
1%	Food and Drug Administration

NOTES: Sixty-seven respondents were in the vaccine unsure sample—which was 15% of the total sample. The vaccine confident sample included 368. The total sample included 435. All percentages rounded from decimals and totals may not equal 100% due to rounding. Percentage points are rounded to the nearest whole number or decimal place. Percentages below 0.50% were rounded down and those that were 0.50% or above were rounded up (e.g., after rounding, 6.49% = 6% and 6.51% = 7%).

CHART 7: THE REASONS GIVEN BY THOSE WHO ARE VACCINE UNSURE

While increasing ease of access to vaccines will be effective for those who are not hesitant, these responses suggest that issues of trust and concerns about side effects are informing their decisions. Respondents were asked to check all that apply

I have safety concerns	69%	I do not trust pharmaceutical companies	42%
I do not trust the current information about it	66%	I do not trust the science	36%
I am worried about side effects	60%	I will when there's more evidence that it is not harmful	31%
I do not trust the media	52%	I want to keep my body pure	28%
The development of a vaccine has been influenced by politics too much	48%	I do not think it will be effective	24%
I do not want to be a guinea pig	46%	I do not think I am personally at risk	19%
I want to wait and see how it affects people in the long term	45%	Other (please specify)	9%
I do not trust the government	43%	I do not think I will have access	4%
		I don't know how to get it	4%

CHART 8: LESS SUPPORT FOR MANDATES THAN VACCINES

Even among manufacturing workers who are vaccine confident, mandates are not very popular.

Mandate in the USA	Total Sample	'Vaccine confident'	'Vaccine hesitant'/unsure
Yes	51%	58%	8%
No	27%	19%	76%
Unsure	22%	23%	17%

Mandate in “your place of employment”	Total Sample	'Vaccine confident'	'Vaccine hesitant'/unsure
Yes	62%	71%	10%
No	32%	22%	88%
Unsure	6%	7%	1%

NOTES: Sixty-seven respondents were in the vaccine unsure sample—which was 15% of the total sample. The vaccine confident sample included 368. The total sample included 435. All percentages rounded from decimals and totals may not equal 100% due to rounding. Percentage points are rounded to the nearest whole number or decimal place. Percentages below 0.50% were rounded down and those that were 0.50% or above were rounded up (e.g., after rounding, 6.49% = 6% and 6.51% = 7%).

THEORIES AT THE BASIS OF THIS WORK AND WHY THEY ARE USEFUL

Here are the theories we drew on for these insights, with brief explanations.

Availability Bias

We use mental shortcuts when judging how likely or frequently an event will happen, because we tend to remember our most recent experience and therefore we put more value on that information. This affects people when they are thinking about how likely something is to reoccur. If a recent event produced strong emotions in us, we're more likely to think this event will happen again.

Tversky, A., & Kahneman, D. (1973). Availability: A heuristic for judging frequency and probability. *Cognitive Psychology*, 5(2), 207-232.

Construal Level Theory

Describes the relationship between psychological distance and the extent to which people's thinking (e.g., about objects and events) is abstract or concrete. The general idea is that the more distant an object is from the individual, the more abstract it will be thought of, while the closer the object is, the more concretely it will be thought of. In CLT, psychological distance is defined on several dimensions—temporal, spatial, social and hypothetical distance are considered most important, though there is some debate among social psychologists about further dimensions like informational, experiential or affective distance.

Trope, Y., & Liberman, N. (2010). Construal-level

theory of psychological distance. *Psychological Review*, 117(2), 440.

Cultural Cognition

Refers to the tendency of individuals to conform their beliefs about disputed matters of fact (e.g., whether humans are causing global warming; whether the death penalty deters murder; whether gun control makes society safer or less safe) to values that define their cultural identities.

<http://www.culturalcognition.net>

Diffusion of Innovation

Explains the pattern and speed at which ideas spread from their introduction to uptake in the wider society. Four elements influence the spread of the new idea: the innovation itself, communication channels, time and the social system. This theory can be used to accelerate the adoption of important public health programs that typically aim to change the behavior of a social system.

Rogers, E. (2003). *Diffusion of Innovations*. Fifth edition. Free Press: New York.

Dual Coding Theory

People have different systems in their mind for processing information: one system for visual imagery and one for verbal communication. Visual and verbal communication are processed differently in the human mind. People are more likely to remember information if it include visual images.

Clark, J. M. & Paivio, A. (1991). Dual coding theory and education. *Educational Psychology Review*, 3(3), 149-170.

Dunning Kruger Effect

The Dunning Kruger effect is a cognitive bias, affecting people at all levels of intelligence, where people tend to overestimate their knowledge or ability in specific areas, especially new ones for them. A lack of self-awareness is considered a reason for this effect because it can prevent people from accurately assessing their own ability/knowledge. Because confidence is so highly praised and sought after in many cultures, many would rather pretend they are skilled or knowledgeable to avoid appearing inadequate or losing face.

Kruger, J., & Dunning, D. (1999). Unskilled and unaware of it: How difficulties in recognizing one's own incompetence lead to inflated self-assessments. *Journal of Personality and Social Psychology*, 77(6), 1121–1134. <https://doi.org/10.1037/0022-3514.77.6.1121>

Fundamental Attribution Error (or the over-attribution effect).

People are often quick to draw conclusions about the attitudes and personalities of others, even when an external factor or cause may explain that behavior.

Ross, L. (1977). The intuitive psychologist and his shortcomings: Distortions in the attribution process. In *Advances in experimental social psychology* (Vol. 10, pp. 173-220). Academic Press.

Berkowitz, L. (1984). *Advances in experimental social psychology*. Academic Press.

Health Belief Model

One of the original public health theories developed in the 1950s, this model suggests that people's beliefs about health problems, perceived benefits of and barriers to action and self-efficacy explain engagement (or lack of engagement) in health-promoting behavior. It's based on the expected value concept: 1) the desire to avoid illness or desire to get well, and 2) the belief that the required action will prevent the illness or make people healthy. The model holds true today, as public health officials look at individual behaviors and their cultural values and beliefs in health when making health decisions.

Boslaugh, Sarah E. (2019). Health belief model. *Salem Press encyclopedia of health*.

Inoculation and Prebunking

A psychological framework derived in the 1960s that aims to induce pre-emptive resistance against unwanted persuasion attempts. Papageorgis and McGuire (1961) explain: "A previous study ... showed that strong initial beliefs are more effectively immunized against persuasion by pre-exposing them to counterarguments ... The present study tested the hypothesis that pre-exposure to refutations of some counterarguments against the belief would have a generalized immunization effect, making the beliefs more resistant to strong doses not only of the specific counter arguments ... but also of alternative arguments against the given belief ... As expected, the beliefs proved highly vulnerable to the strong counterarguments when there was no prior immunization. Immunization had a direct strengthening effect on the beliefs and also substantially reduced the effect of the subsequent strong counterarguments."

Papageorgis, D., & McGuire, W. J. (1961). The generality of immunity to persuasion produced by pre-exposure to weakened counterarguments. *The Journal of Abnormal and Social Psychology*, 62(3), 475–481. <https://doi.org/10.1037/h0048430>

Rozenbeek, J., van der Linden, S., & Nygren, T. (2020). Prebunking interventions based on the psychological theory of "inoculation" can reduce susceptibility to misinformation across cultures.

Mental Models

Mental models are the images, thoughts, ideas and beliefs that we form based on our experiences. These models are formed intentionally and unintentionally and can be based on real or imagined experiences. These mental models help us navigate the world around us, forming our perception and understanding of the things we encounter.

Ungvarsky, J. (2020). Mental model. *Salem press encyclopedia*, [s.l.].

Moral Foundations Theory

With roots in sociology and social psychology going back to Emile Durkheim, scholars in the 1990s and 2000s coined the term "moral foundations theory," which proposes that several innate and universally

available psychological systems are the foundations of “intuitive ethics.” Each culture then constructs virtues, narratives and institutions on top of these foundations, thereby creating the unique moralities we see around the world, and conflicting within nations too. The six foundations for which they think there currently is evidence are: 1) care/harm; 2) fairness/cheating; 3) loyalty/betrayal; 4) authority/subversion; 5) sanctity/degradation; 6) liberty/oppression.

This finding is important for framing arguments, as Feinberg and Willer (2015) tested, claiming that frames that target a person’s morality are more likely to have success in changing minds.

Feinberg, M., & Willer, R. (2015). From Gulf to Bridge: When Do Moral Arguments Facilitate Political Influence? *Personality and Social Psychology Bulletin*. 41(12), 1665-1681. <https://doi.org/10.1177/0146167215607842>

Moralization

Moralization is the degree to which moral relevance is attached to issues, actions or entities and the changes within their relevance. Morals can change at a personal level or a societal level. Rozin (1999) defined moralization as a process that “involves the acquisition of moral qualities by objects or activities that previously were morally neutral.”

Rozin, P. (1999). The process of moralization. *Psychological Science*, 10(3), 218–221.

Rhee, J. J., Schein, C., & Bastian, B. (2019). The what, how, and why of moralization: A review of current definitions, methods, and evidence in moralization research. *Social and Personality Psychology Compass*, 13(12).

Motivated Reasoning

Motivated reasoning moves people to justify decisions, actions or outcomes that they most desire in spite of contradictory evidence. We tend to find arguments to support the outcomes we want and ignore those that we don’t want to believe, especially if our goal is to protect our standing in a social group or our own identity. It is similar to confirmation bias, where we purposefully seek out and give more credibility to the information that confirms our beliefs rather than seeking for information that contradicts

us. The stronger our emotional stake is to the subject at hand, the stronger our emotional attachment will become each time we are confronted with the information, eventually reinforcing and strengthening our conclusions.

Kunda, Z. (1990). The case for motivated reasoning. *Psychological Bulletin*, 108 (3), 480-498.

Kahan, D. M. (2012). Ideology, motivated reasoning, and cognitive reflection: An experimental study. *Judgment and Decision Making*, 8, 407-424.

Motivational Interviewing

A technique used to help people deeply examine their behavior and beliefs about a subject in an effort to have them change a behavior or belief. The interviewer frames questions in a way that enhances the likelihood that the interviewee will engage in change-oriented talk. It requires good listening skills as well as directing (giving good advice). The goal is to empower people while they explore their reasons and come to the conclusion on their own to make the behavior change.

Miller, W. R., & Rollnick, S. (2013). *Motivational interviewing: Helping people change* (p. 29). New York, NY: Guilford.

Froiland, J. M. (2020). *Motivational interviewing (MI)*. Salem Press encyclopedia.

Prospect Theory

Prospect theory comes from behavioral economics and is credited to Daniel Kahneman and Amos Tversky and their 1979 paper “Prospect Theory: An Analysis of Decision under Risk,” in which they argue individuals assess gains and losses in asymmetric ways. In other words, there is more aversion to loss than inclination toward gains. This tendency, they argue, contributes to risk aversion in choices involving sure gains and to risk-seeking in choices involving sure losses.

This has real-world effects in that the overweighting of low probabilities may contribute to the attractiveness of insurance and gambling.

This theory stands in contrast to expected utility theory, which expects people to act the same

in terms of loss and gains and to always try to maximize utility; yet, prospect theory holds up under rigorous studies in the real world, as opposed to expected utility theory.

Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica*, 47(2), 263-291. doi:10.2307/1914185

Post, T., Van den Assem, M., Baltussen, G., & Thaler, R. (2008). Deal or no deal? Decision making under risk in a large-payoff game show. *The American Economic Review*, 98(1), 38-71. Retrieved February 22, 2021, from <http://www.jstor.org/stable/29729963>

Psychological Distance

This term refers to our perceived cognitive distance between ourselves and other instances (people, events, times). When we perceive the psychological distance to be large, we focus on the big picture and think in abstraction and desirability. When the perceived distance is small, we think more concretely.

Trope, Y., & Liberman, N. (2003). Temporal construal. *Psychological Review*, 110 (3), 403-421.

Reactance

The way someone reacts when they feel that their personal choice is being taken away or that their choices have been limited. People are motivated to protect their freedom of choice and once that choice has been taken away from them, they become critical of that choice. This has been also referred to as “sour grapes.”

Brehm, S. S., & Brehm, J. W. (2013). *Psychological Reactance: a theory of freedom and control*. Academic Press.

Risk Perception

People predominantly assess risk intuitively, or by their feelings. In day-to-day life, most people judge the risk quickly and make decisions based on those immediate appraisals. We normally do not look at risk analytically. When fear is involved, we tend to see the risk as high, most likely because there is uncertainty and perceived lack of personal control. When anger is involved, we see a certain risk as lower because we feel more certain and believe we have control.

Slovic, Paul (2016). Understanding perceived risk: 1978–2015. *Environment: Science and Policy for Sustainable Development*. 58(1), 25–29. doi:10.1080/00139157.2016.1112169

Tversky, A., & Kahneman, D. (1974). Judgment under uncertainty: heuristics and biases. *Science*. 185(4157), 1124–1131. doi:10.1126/science.185.4157.1124

Self-Affirmation Theory

This theory explores how people adapt to situations and information that threaten their sense of self. If people focus on the values that are personally meaningful to them when faced with information that threatens their sense of self, they are less likely to be upset and become defensive.

Steele, C. M. (1988). The psychology of self-affirmation: Sustaining the integrity of the self. In *Advances in experimental social psychology* (Vol. 21, pp. 261-302). Academic Press.

Self-Determination Theory

This theory explores how people are motivated to act and how to move others to act. People constantly seek new experiences and challenges to master. This theory describes intrinsic and extrinsic motivation and people’s tendency toward growth. People’s intrinsic motivation toward growth relies on three core needs: competence, autonomy and relatedness.

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York, NY: Plenum.

Social Dominance Theory

A theory that stable societies and social groups tend to organize hierarchically around status, power and economic opportunity, without any formalized acknowledgment. People in the higher level of the hierarchy have advantages over those in the lower levels, including access to jobs, health care and education. The theory attempts to explain how and why people divide themselves, or are divided by society and how this division reinforces discrimination such as racism, ageism and sexism.

Keene, B. M. (2020). *Social dominance theory*.

Salem Press encyclopedia.

Sidanius, J., & Pratto, F. (2001). *Social dominance: an intergroup theory of social hierarchy and oppression*. Cambridge UP.

Social Identity Theory

“Social identity theory maintains that all individuals are motivated to achieve and maintain a positive self-concept. A person’s self-concept derives from two principal sources: personal identity and social identity. Personal identity includes one’s individual traits, achievements and qualities. Social identity includes the group affiliations that are recognized as being part of the self, such as one’s image of oneself as a Protestant, a blue-collar worker, or a conservative. Some individuals emphasize the personal aspects in their quest for a favorable self-image, while others emphasize their social identities. Social identity theory focuses on the latter. It attempts to explain when and how individuals transform their group affiliations to secure a favorable self-concept.”

Hogg, M. A. (2016). Social identity theory. In *Understanding peace and conflict through social identity theory* (3-17). Springer, Cham.

Rodriguez, J. (2019). Social identity theory. Salem Press encyclopedia of health.

Social Norms

Social norms are informal and formal rules that govern how we act and what we see as normal and taboo. Examples in Western culture are saying “excuse me” if you accidentally bump into someone or not interrupting someone when they’re speaking. A social norms approach to change focuses less on changing beliefs and more on changing perceptions of what other people like us do. Our behavior is influenced by those around us. If we think something is a social norm (or becoming one), we will update our own actions to fit in. The social norms theory was first used by Perkins and Berkowitz in 1986 to address alcohol consumption in a student population.

Perkins, H. W., & Berkowitz, A. D. (1986). Perceiving the community norms of alcohol use among students: Some research implications for campus alcohol education programming. *International Journal of the Addictions*, 21 (9-10), 961–976.

Terror Management Theory

People recognize that death is unpredictable and inevitable, which conflicts with the drive for self-preservation. Therefore, people invest in cultural beliefs and worldviews to counter the fear that death is inevitable. People seek symbolic immortality through their connection with things greater than themselves. A high self-esteem helps sway the fear of mortality.

Miller, S. P. (2019). Terror management theory. Salem Press encyclopedia.

Greenberg, J., & Arndt, J. (2012) Terror management theory. In *Handbook of theories of social psychology: Vol. 1* (398–415). Thousand Oaks, Calif.: Sage.

Theory of Planned Behavior (TPB)

This theory helps explain what makes people go from intention to action. It posits that behaviors are planned and therefore can be predicted. If someone evaluates an intended behavior as positive and they believe other people in their group want them or approve of them performing that behavior, they will have a stronger motivation to act and they’ll be more likely to do it. People are also much more likely to intend to act on behaviors if they feel they can do them successfully. The person’s attitude, perceived behavioral control and the subjective norms all shape a person’s behavioral intentions. “A tenet of TPB is that behavioral intention is the most proximal determinant of human social behavior.” This theory can help predict if a person will perform certain behaviors.

Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In *Action control* (11-39). Springer, Berlin, Heidelberg.

APPENDIX B

REFERENCES

- Abhyankar, P., O'Connor, D. B., & Lawton, R. (2008). The role of message framing in promoting MMR vaccination: Evidence of a loss-frame advantage. *Psychology, Health & Medicine*, 13(1), 1–16. <https://doi.org/10.1080/13548500701235732>
- Achar, C., Agrawal, N., & Hsieh, M. H. (2020). Fear of detection and efficacy of prevention: Using construal level to encourage health behaviors. *Journal of Marketing Research*, 57(3), 582–598.
- Agarwal, V. (2014). A/H1N1 vaccine intentions in college students: An application of the theory of planned behavior. *Journal of American College Health*, 62(6), 416–424.
- Ancker, J. S., Senathirajah, Y., Kukafka, R., & Starren, J. B. (2006a). Design Features of Graphs in Health Risk Communication: A Systematic Review. *Journal of the American Medical Informatics Association*, 13(6), 608–618. <https://doi.org/10.1197/jamia.m2115>
- Andarge, E., Fikadu, T., Temesgen, R., ... & Glagn, M. (2020). Intention and practice on personal preventive measures against the COVID-19 pandemic among adults with chronic conditions in southern Ethiopia: A survey using the theory of planned behavior. *Journal of Multidisciplinary Healthcare*, 13, 1863–1877.
- Andrews, J. C., Netemeyer, R. G., Kees, J., & Burton, S. (2014). How Graphic Visual Health Warnings Affect Young Smokers' Thoughts of Quitting. *Journal of Marketing Research*, 51(2), 165–183. <https://doi.org/10.1509/jmr.13.0092>
- Avery, E. J., & Park, S. (2018). HPV vaccination campaign fear visuals: An eye-tracking study exploring effects of visual attention and type on message informative value, recall, and behavioral intentions. *Public Relations Review*, 44(3), 321–330. <https://doi.org/10.1016/j.pubrev.2018.02.005>
- Bavel, J. J., Baicker, K., Boggio, P. S., ... & Willer, R. (2020). Using social and behavioural science to support COVID-19 pandemic response. *Nature Human Behavior*, 4, 460–471.
- Betsch, C., Böhm, R., Korn, L., & Holtmann, C. (2017). On the benefits of explaining herd immunity in vaccine advocacy. *Nature Human Behavior*, 1, 0056.
- Bokat-Lindell, S. (2021). Opinion | What Does a Future Without Herd Immunity Look Like? *The New York Times*. <https://www.nytimes.com/2021/05/20/opinion/herd-immunity-covid.html>
- Bowen, J. D. (2021). Psychological distance and the pandemic: Insights from Construal Level Theory and relationship science. *Social and Personality Psychology Compass*.
- Callaghan, T., Moghtaderi, A., Lueck, J. A., Hotez, P. J., Strych, U., Dor, A., ... & Motta, M. (2020). Correlates and disparities of COVID-19 vaccine hesitancy. Available at SSRN 3667971. <https://doi.org/10.2139/ssrn.3667971>
- Caserotti, M., Girardi, P., Rubaltelli, E., Tasso, A., Lotto, L., & Gavaruzzi, T. (2021). Associations of COVID-19 risk perception with vaccine hesitancy over time for Italian residents. *Social Science Medicine*, 272, 113688.
- Chou, W.-Y. S., & Budenz, A. (2020). Considering emotion in COVID-19 vaccine communication: Addressing vaccine hesitancy and fostering vaccine confidence. *Health Communication*, 35(14), 1718–1722.
- Coronavirus disease (COVID-19): Herd immunity, lockdowns and COVID-19. (2020). World Health Organization. <https://www.who.int/news-room/q-a-detail/herd-immunity-lockdowns-and-covid-19>
- Correa-Fernández, V., Wilson, W. T., Shedrick, D. A., Kyburz, B., L. Samaha, H., Stacey, T., Williams, T., Lam, C. Y., & Reitzel, L. R. (2017). Implementation of a tobacco-free workplace program at a local mental health authority. *Translational Behavioral Medicine*, 7(2), 204–211. <https://doi.org/10.1007/s13142-017-0476-2>
- Courtenay, W. H. (2000). Constructions of masculinity and their influence on men's well-being: a theory of gender and health. *Social Science & Medicine*, 50(10), 1385–1401. [https://doi.org/10.1016/S0277-9536\(99\)00390-1](https://doi.org/10.1016/S0277-9536(99)00390-1)
- Dai, H., Saccardo, S., Han, M., ... & Croymans, D. (2021). Behavioral nudges increase COVID-19 vaccinations: Two randomized controlled trials. Available at <https://ssrn.com/abstract=3817832> .

- de Beaumont Foundation. (2021). Changing the COVID Conversation. <https://debeaumont.org/changing-the-covid-conversation/>
- Debnath, R., & Bardhan, R. (2020). India nudges to contain COVID-19 pandemic: A reactive public policy analysis using machine-learning based topic modelling. *PLoSone*, 15(9).
- Dubov, A., & Phung, C. (2015) Nudges or mandates? The ethics of mandatory flu vaccination. *Vaccine*, 33(22), 2530-2535.
- Dvorak, P. (2021, May 9). Economists Disagree Over How Much Covid-19 'Herd Immunity' Needed for Recovery. *Wall Street Journal*. <https://www.wsj.com/articles/economists-disagree-over-how-much-covid-19-herd-immunity-needed-for-recovery-11620568800?page=1>
- Ellingson, M.K., Dudley, M.Z., Limaye, R.J., Salmon D.A., O'Leary, S.T., & Omer, S.B. (2019) Enhancing uptake of influenza maternal vaccine. *Expert Review of Vaccines*, 18(2), 191–204.
- Faasse, K., & Newby, J. (2020). Public perceptions of COVID-19 in Australia: Perceived risk, knowledge, health-protective behaviors, and vaccine intentions. *Frontiers in Psychology*, 11.
- Fleming, P. J., Lee, J. G., & Dworkin, S. L. (2014). "Real men don't": Constructions of masculinity and inadvertent harm in public health interventions. *American Journal of Public Health*, 104(6), 1029-1035. <https://doi.org/10.2105/AJPH.2013.301820>
- Gallagher, K. M., & Updegraff, J. A. (2011). Health Message Framing Effects on Attitudes, Intentions, and Behavior: A Meta-analytic Review. *Annals of Behavioral Medicine*, 43(1), 101–116. <https://doi.org/10.1007/s12160-011-9308-7>
- Gerend, M. A., & Shepherd, J. E. (2020). Predicting human papillomavirus vaccine uptake in young adult women: Comparing the health belief model and theory of planned behavior. *Annals of Behavioral Medicine*, 44(2) 171-180.
- Gerend, M. A., Shepherd, J. E., & Monday, K. A. (2008). Behavioral Frequency Moderates the Effects of Message Framing on HPV Vaccine Acceptability. *Annals of Behavioral Medicine*, 35(2), 221–229. <https://doi.org/10.1007/s12160-008-9024-0>
- Godinho, C. A., Yardley, L., Marcu, A., Mowbray, F., Beard, E., & Michie, S. (2016). Increasing the intent to receive a pandemic influenza vaccination: Testing the impact of theory-based messages. *Preventive Medicine*, 89, 104–111. <https://doi.org/10.1016/j.ypmed.2016.05.025>
- Grant, A. (2021). Opinion | The Science of Changing Someone's Mind. *The New York Times*. <https://www.nytimes.com/2021/01/31/opinion/change-someones-mind.html>
- Grinspan, L. and Conack, B., (2021). 'My body, my choice.' Republicans' resistance may be slowing Florida vaccine campaign. *Miami Herald*. <https://www.miamiherald.com/news/coronavirus/article251367333.html>
- Guidry, J. P., Carlyle, K. E., LaRose, J. G., Perrin, P., Ryan, M., Messner, M., & Adams, J. (2018). Framing and visual type: Effect on future Zika vaccine uptake intent. *Journal of Public Health Research*. Published. <https://doi.org/10.4081/jphr.2018.1162>
- Hornsey, M. J., Finlayson, M., Chatwood, G., & Begeny, C. T. (2020). Donald Trump and vaccination: The effect of political identity, conspiracist ideation and presidential tweets on vaccine hesitancy. *Journal of Experimental Social Psychology*, 88, 103947. <https://doi.org/10.1016/j.jesp.2019.103947>
- Houts, P. S., Doak, C. C., Doak, L. G., & Loscalzo, M. J. (2006). The role of pictures in improving health communication: A review of research on attention, comprehension, recall, and adherence. *Patient Education and Counseling*, 61(2), 173–190. <https://doi.org/10.1016/j.pec.2005.05.004>
- Jaspal, R., & Breakwell, G. M. (2021). Social support, perceived risk and the likelihood of COVID-19 testing and vaccination: cross-sectional data from the United Kingdom
- Justwan, F., Baumgaertner, B., Carlisle, J. E., Carson, E., & Kizer, J. (2019). The effect of trust and proximity on vaccine propensity.
- Kahan, D. M., & Braman, D. (2003). More Statistics, Less Persuasion: A Cultural Theory of Gun-Risk Perceptions. *University of Pennsylvania Law Review*, 151(4), 1291. <https://doi.org/10.2307/3312930>
- Kahneman, D. (2011). *Thinking, fast and slow*. New York, NY: Farrar, Straus and Giroux.
- Karlsson, L. C., Soveri, A., Lewandowsky, S., ... & Antfolk, J. (2021). Fearing the disease or the vaccine: The case of COVID-19. *Personality and Individual Differences*, 172.
- KFF COVID-19 Vaccine Monitor – April 2021. (2021). Kaiser Family Foundation. <https://www.kff.org/coronavirus-covid-19/poll-finding/kff-covid-19-vaccine-monitor-april-2021/>
- KFF COVID-19 Vaccine Monitor – May 2021. (2021). Kaiser Family Foundation. <https://www.kff.org/coronavirus-covid-19/poll-finding/kff-covid-19-vaccine-monitor-may-2021/>
- Kim, J., & Nan, X. (2019). Temporal framing effects differ for narrative versus non-narrative messages: The case of promoting HPV vaccination. *Communication Research*, 46(3), 401-417.
- King, A. J., & Lazard, A. J. (2020a). Advancing Visual Health Communication Research to Improve Infodemic Response. *Health Communication*, 35(14), 1723–1728. <https://doi.org/10.1080/10410236.2020.1838094>

- Latkin, C. A., Dayton, L., Yi, G., Colon, B., & Kong, X. (2021a). Mask usage, social distancing, racial, and gender correlates of COVID-19 vaccine intentions among adults in the US. *PloS ONE*, 16(2), e0246970. <https://doi.org/10.1371/journal.pone.0246970>
- Latkin, C., Dayton, L. A., Yi, G., Konstantopoulos, A., Park, J., Maulsby, C., & Kong, X. (2021b). COVID-19 vaccine intentions in the United States, a social-ecological framework. *Vaccine*, 39(16), 2288-2294. <https://doi.org/10.1016/j.vaccine.2021.02.058>
- Lin, Y., Osman, M., & Ashcroft, R. (2017). Nudge: concept, effectiveness, and ethics. *Basic and Applied Social Psychology*, 39(6), 293-306.
- Lipkus, I. M., & Hollands, J. G. (1999). The Visual Communication of Risk. *JNCI Monographs*, 1999(25), 149–163. <https://doi.org/10.1093/oxfordjournals.jncimonographs.a024191>
- Lorini, C., Lerardi, F., Gatteschi, C., ... & Bonaccorsi, G. (2020). Promoting influenza vaccination among staff of nursing homes according to behavioral insights: analyzing the choice architecture during a nudge-based intervention. *Vaccines*, 8(4), 600.
- Luce, C. B., Hewlett, S. A., Kennedy, J. T., & Sherbin, L. (2015). The power of the purse: Engaging women decision makers for healthy outcomes. Center for Talent Innovation. https://www.talentinnovation.org/_private/assets/PopHealthcare_ExecSumm-CTI.pdf
- Malik, A. A., McFadden, S. M., Elharake, J., & Omer, S. B. (2020). Determinants of COVID-19 vaccine acceptance in the US. *EClinicalMedicine*, 26, 100495. <https://doi.org/10.1016/j.eclinm.2020.100495>
- Mathieu, E., Ritchie, H., Ortiz-Ospina, E. et al. A global database of COVID-19 vaccinations. *Nat Hum Behav* (2021) <https://ourworldindata.org/covid-vaccinations?country=USA>
- McLean, C. P., & Anderson, E. R. (2009). Brave men and timid women? A review of the gender differences in fear and anxiety. *Clinical Psychology Review*, 29(6), 496-505. <https://doi.org/10.1016/j.cpr.2009.05.003>
- Milkman, K. L., Patel, M. S., Graci, H., ... & Duckworth, A. (2021). A mega-study of text-based nudges encouraging patients to get vaccinated at an upcoming doctor's appointment. Working Paper No. 3780267.
- Milner, A., Shields, M., & King, T. (2019). The influence of masculine norms and mental health on health literacy among men: Evidence from the ten to men study. *American Journal of Men's Health*, 13(5), 1-9. <https://doi.org/10.1177/1557988319873532>
- Nan, X., Xie, B., & Madden, K. (2012). Acceptability of the H1N1 Vaccine Among Older Adults: The Interplay of Message Framing and Perceived Vaccine Safety and Efficacy. *Health Communication*, 27(6), 559–568. <https://doi.org/10.1080/10410236.2011.617243>
- Nyhan, B., Reifler, J., Richey, S., & Freed, G. L. (2014). Effective messages in vaccine promotion: A randomized trial. *Pediatrics*, 133, 1-8. <https://doi.org/10.1542/peds.2013-2365>
- Palmer, C. L., & Peterson, R. D. (2020). Toxic Mask-ularity: The link between masculine toughness and affective reactions to mask wearing in the COVID-19 era. *Politics & Gender*, 16(4), 1044-1051. <https://doi.org/10.1017/S1743923X20000422>
- Patel, S. (2018). Nudges for influenza vaccination. *Nature Human Behavior*, 2, 720-721.
- Pennycook, G., McPhetres, J., Zhang, Y., Lu, J. G., & Rang, D. G. (2020). Fighting COVID-19 misinformation on social media: Experimental evidence for a scalable accuracy-nudge intervention. *Psychological Science*, 31(7), 770-780.
- Petty, R. E., & Wegener, D. T. (1999). The elaboration likelihood model: Current status and controversies. In S. Chaiken & Y. Trope (Eds.), *Dual process theories in social psychology* (pp. 41–72). New York: Guilford Press
- Phua, J., & Tinkham, S. (2016). Authenticity in Obesity Public Service Announcements: Influence of Spokesperson Type, Viewer Weight, and Source Credibility on Diet, Exercise, Information Seeking, and Electronic Word-of-Mouth Intentions. *Journal of Health Communication*, 21(3), 337–345. <https://doi.org/10.1080/10810730.2015.1080326>
- Pluviano, S., Watt, C., & Della Sala, S. (2017a). Misinformation lingers in memory: Failure of three pro-vaccination strategies. *PLOS ONE*, 12(7), e0181640. <https://doi.org/10.1371/journal.pone.0181640>
- Puig-Ribera, Señé-Mir, Taylor-Covill, De Lara, Carroll, Daley, Holder, Thomas, Milà, & Eves. (2019). Signage Interventions for Stair Climbing at Work: More than 700,000 Reasons for Caution. *International Journal of Environmental Research and Public Health*, 16(19), 3782. <https://doi.org/10.3390/ijerph16193782>
- Radnofsky, L., & Cohen, B. (2021, May 7). Roll Vax! Alabama Drafts Nick Saban to Champion the Vaccine. *Wall Street Journal*. <https://www.wsj.com/articles/nick-saban-covid-vaccine-alabama-football-11620358870>
- Ray, B. J. (2021, May 17). Over 1 Billion Worldwide Unwilling to Take COVID-19 Vaccine. *Gallup*. <https://news.gallup.com/poll/348719/billion-unwilling-covid-vaccine.aspx>
- Sandman, D., Simantov, E., & An, C. (2000). Out of touch: American men and the health care system. *Commonwealth Fund Men's and Women's Health Survey Findings*. https://www.usrf.org/breakingnews/Men_out_of_touch.pdf
- Sansone, A., Mollaioli, D., Ciocca, G., Limoncin, E., Colon-

- nello, E., Vena, W., & Jannini, E. A. (2020). Addressing male sexual and reproductive health in the wake of COVID-19 outbreak. *Journal of Endocrinological Investigation*, 44(2), 223–231. <https://doi.org/10.1007/s40618-020-01350-1>
- Schlichthorst, M., King, K., Reifels, L., Phelps, A., & Pirkis, J. (2019). Using social media networks to engage men in conversations on masculinity and suicide: Content analysis of Man Up Facebook campaign data. *Social Media + Society*, 5(4), 1-13. <https://doi.org/10.1177/2056305119880019>
- Sgaier, S. K. (2021, May 22). Opinion | Meet the Four Kinds of People Holding Us Back From Full Vaccination. *The New York Times*. <https://www.nytimes.com/interactive/2021/05/18/opinion/covid-19-vaccine-hesitancy.html>
- Sheeran, P., Conner, M., & Norman, P. (2001). Can the theory of planned behavior explain patterns of health behavior change? *Health Psychology*, 20(1), 12–19.
- Slovic, P. (2010). If I look at the mass I will never act: Psychic numbing and genocide. In *Emotions and risky technologies* (pp. 37-59). Springer, Dordrecht.
- Spring Update: A World in Trauma. (2021). Edelman. <https://www.edelman.com/trust/2021-trust-barometer/spring-update>
- Steyn, N.P., Parker, W., Lambert, E.V., et al., (2009) Nutrition interventions in the workplace: evidence of best practice. In: *Database of Abstracts of Reviews of Effects (DARE): Quality-assessed Reviews [Internet]*. York (UK): Centre for Reviews and Dissemination (UK); 1995-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK78544/>
- Surgo Ventures. (2021). U.S. General Population COVID-19 Vaccine Uptake Survey: A Psychobehavioral Approach to Promoting COVID-19 Vaccine Uptake. https://static1.square-space.com/static/5f7671d12c27e40b67ce4400/t/602fb-213fa39760e98d41107/1613738515783/FINAL_Surgo+Ventures+General+Population+Survey+Summary.pdf
- Tannenbaum, M. B., Hepler, J., Zimmerman, R. S., Saul, L., Jacobs, S., Wilson, K., & Albarracín, D. (2015). Appealing to fear: A meta-analysis of fear appeal effectiveness and theories. *Psychological Bulletin*, 141(6), 1178–1204. <https://doi.org/10.1037/a0039729>
- Thaler, R. H., & Sunstein, C. R. (2009). *Nudge: Improving decisions about health, wealth, and happiness*. London, England: Penguin Books.
- Tikotsky, A., Sahar-Inbar, S. & Peer, E. (2020). Minorities' support for pro-social nudges increases for COVID-19 prevention nudges.
- Troiano, G., & Nardi, A. (2021). Vaccine hesitancy in the era of COVID-19. *Public Health*. <https://doi.org/10.1016/j.puhe.2021.02.025>
- U.S. Department of Labor (2013). General facts on women and job based health. <https://www.dol.gov/sites/dolgov/files/ebsa/about-ebsa/our-activities/resource-center/fact-sheets/women-and-job-based-health.pdf>
- Van Gestel, L. C., Adriannse, M. A., & De Ridder, D. T. D. (2020). Do nudges make use of automatic processing? Unraveling the effects of a default nudge under type 1 and type 2 processing. *Comprehensive Results in Social Psychology*.
- Västfjäll, D., Slovic, P., Mayorga, M., & Peters, E. (2014). Compassion fade: Affect and charity are greatest for a single child in need. *PloS one*, 9(6), e100115.
- Witus, L. S., & Larson, E. (2021). A randomized controlled trial of a video intervention shows evidence of increasing COVID-19 vaccination intention. *medRxiv*. <https://doi.org/10.1101/2021.03.26.21254433>
- Wright, A. (2021). Republican Men Are Vaccine-Hesitant, But There's Little Focus on Them. *Pew Charitable Trust / Stateline*. <https://www.pewtrusts.org/en/research-and-analysis/blogs/stateline/2021/04/23/republican-men-are-vaccine-hesitant-but-theres-little-focus-on-them>
- Wu, A. G., Shah, A. S., Haelle, T. S., Lunos, S. A., & Pitt, M. B. (2018). Choosing the perfect shot – The loaded narrative of imagery in online news coverage of vaccines. *PLOS ONE*, 13(6), e0199870. <https://doi.org/10.1371/journal.pone.0199870>
- Xiao, X., & Wong, R. M. (2020). Vaccine hesitancy and perceived behavioral control: A meta-analysis. *Vaccine*, 38(3), 5131-5138.
- Yu, Y., Lau, J. T. F., & Lau, M. M. C. (2021). Levels and factors of social and physical distancing based on the Theory of Planned Behavior during the COVID-19 pandemic among Chinese adults. *Translational Behavioral Medicine*.

APPENDIX C

PARTICIPATING SCHOLARS

The following scholars were engaged as part of a multi-disciplinary research review to inform this project's insights and strategic recommendations.

Rose Hendricks, Ph.D.

Society Civic Science Initiative

Dr. Hendricks is a cognitive scientist and the Program Director for the Society Civic Science Initiative, a network of scientific societies working to support impactful public engagement with science. Previously, Rose conducted research at the FrameWorks Institute to understand public thinking about a range of social and scientific issues and test communications strategies for advocates. She earned her doctorate in cognitive science from the University of California, San Diego.

Zhiye Sherry Jiang

Georgetown University

Jiang is a graduate student pursuing her master's degree in business administration in the McDonough School of Business and a spring 2021 Global Health Initiative fellow working with Georgetown Professor Rosemary Sokas, Ph.D., whose work focuses on needs of under-served working populations. Sherry's previous work experience focused on cancer prevention and control, using digital solutions to help increase cancer screening rates, and reducing healthcare disparities. At Georgetown, Sherry also serves as president of the Healthcare Business Alliance and executive vice president of the Human Capital and Leadership club.

Adam Koon, Ph.D.

Johns Hopkins University

Dr. Koon's work focuses on understanding the forces that structure human behavior in the health policy process. He approaches policy as a contest of ideas, shaped by language and deeper value conflicts and applies these concepts to work on health financing, health workforce development, and the regulation of harmful consumer products. Dr. Koon has published widely on "framing" and overlapping phenomena such as "sensemaking" and "storytelling" in the health policy process. His work has been published in *Social Science and Medicine*, *Health Policy and Planning*, *Bulletin of the World Health Organization*, the *Journal of Health Politics, Policy, and Law*, as well as other health policy journals. Currently, Dr. Koon is collaborating on research in Kenya (UNICEF), Uganda (GHR Foundation), Bangladesh (Gates Ventures), and the Philippines (Bloomberg Philanthropies).

Arunima Krishna, Ph.D.

Boston University

Dr. Krishna is interested in publics' communication behaviors related to controversial social issues, particularly issues related to scientific knowledge. Her most recent research looks at how individuals' knowledge deficiency about vaccines impacts their attitudes, motivations, and behaviors about vaccine safety. She is also interested in how publics' perceptions and attitudes about issues relate to their attitudes about certain organizations. Dr. Krishna has taught a variety of courses, including public relations writing.

Heidi Lawrence, Ph.D.

George Mason University

Dr. Lawrence is an associate professor for writing and rhetoric at George Mason University. Her research focuses on the rhetorics of medical and scientific controversies, specifically public debates about vaccinations.

Rita Linjuan Men, Ph.D.

University of Florida

Dr. Men is an associate professor in the Department of Public Relations at the University of Florida. Men's background is based primarily in corporate communication research and consulting. Her research interests include internal communication, leadership communication, measurement and evaluation, relationship/reputation management, emerging technologies, and entrepreneurial communications.

Chelsea Moss, M.A.

University of Florida

Moss is a first year doctoral student and graduate research assistant in UF's College of Journalism and Communications. Her research interests are at the intersection of entertainment media and family communication, both how families are portrayed in media, as well as how real-world family members navigate and discuss their media consumption. Chelsea earned her Master of Arts in Communication from Purdue University and completed her Bachelor of Arts in Journalism and Mass Communication at Bob Jones University.

Tom Mueller, Ph.D.

Utah State University

Dr. Mueller is a rural sociologist and demographer focused on environmental inequality, health, and well-being in rural America. With a particular focus on environmental and natural resource issues, Mueller works to understand why some places have persistently lower well-being than others, and what we can do to fix that.

Claudine Pied, Ph.D.

University of Wisconsin-Platteville

Dr. Pied is an associate professor of sociology and anthropology at the University of Wisconsin-Platteville. Her research has focused on intersections of politics, economics, and identity in rural communities in the United States. She is currently working on two projects related to changing land ownership and access: one on the politics of forestland access in the northeast and the other on the effects of agricultural land consolidation in Wisconsin.

Sophia Pink, M.S.

Stanford University

Pink is a research coordinator at the Polarization and Social Change Lab at Stanford University. Her research areas include political psychology, group behavior and understanding the causes

and consequences of partisan animosity. In the past year, she has conducted dozens of experiments testing COVID-19 public health messaging. Sophia received her bachelor's and masters' degrees from Stanford University.

Jessica Schad, Ph.D.

Utah State University

Dr. Ulrich-Schad is a rural sociologist whose research focuses on the reciprocal and dynamic relationship between natural resources and society. Her research focuses on the impacts of natural resource-related trends or events on social interaction and perceived quality of life within different types of rural places at both individual and community levels.

Jennifer Sherman, Ph.D.

Washington State University

Dr. Sherman's research looks at the interactions of economic conditions, cultural norms, gender, and family outcomes, particularly in rural areas. Sherman focuses on families experiencing poverty, unemployment and low incomes in order to understand the ways in which their choices and decisions are impacted by economic constraints and community contexts.

Anni Sternisko, M.A.

New York University

Sternisko is a doctoral candidate in the social psychology program at New York University. She earned her Bachelor of Science in Psychology from Ludwig-Maximilians-Universität Munich and holds a Master of Arts and a Master of Philosophy from New York University. She conducts research on conspiracy theory beliefs and their consequences for society, political ideology, and moral cognition. Anni's work has received multiple awards and was covered by media outlets such as Psychology Today and The Inverse. Besides her research, Sternisko has been working as a consultant on misinformation and conspiracy theories.

T. Frank Waddell, Ph.D.

University of Florida

Dr. Waddell is an assistant professor in the Department of Journalism at the University of Florida's College of Journalism and Communications. His current research interests are at the intersection of new technology and online storytelling including work related to automated news, the psychology of online comments, and the effects of social television.

Gregory Wagner, M.D.

Harvard University

Dr. Wagner is an adjunct professor of environmental health at the Harvard T.H. Chan School of Public Health, where he teaches about the science behind occupational and environmental policies and regulations and the limits of regulatory health protective strategies. He previously worked at the U.S. National Institute for Occupational Safety and Health, where he served as senior advisor, directed the Division of Respiratory Disease Studies, led the process creating a National Occupational Research Agenda, and developed and led the WorkLife Initiative. He has worked closely with both the World Health Organization and International Labor Organization to stimulate and support international efforts to better recognize and prevent lung diseases from work and improve screening and surveillance practices. Board certified in internal medicine and public (occupational) health, Dr. Wagner has practiced rural primary care medicine and taught both medicine and public health.

ABOUT THE GUIDE

This guide was commissioned by **The Manufacturing Institute** and developed by the **Center for Public Interest Communications** at the **University of Florida**.

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