American Trust in Science & Institutions in the Time of COVID-19

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The COVID-19 pandemic prompted many discussions about how people's trust in science shaped our ability to address the crisis. Early in the pandemic, our research team set out to understand how trust in science relates to support for public health guidelines, and to identify some trusted sources of science. In this essay, we share our findings and offer ideas about what might be done to strengthen the public's trust in science. Notably, our research shows a stark partisan divide: Republicans had lower support for public health guidelines, and their trust in science and institutions such as the Centers for Disease Control and Prevention and the National Institutes of Health eroded over time. Meanwhile, Democrats' trust in science has remained high throughout the pandemic. In the context of this divide, we explore how trust in various information sources, from governmental institutions to the media, relates to trust in science, and suggest that the best avenue for rebuilding trust might be through empowering local institutions and leaders to help manage future crises.

Until 2020, the 1918 influenza pandemic had the ignoble badge of being the second deadliest pandemic in human history after the Bubonic Plague. With surprising speed, the "Spanish flu" spread to all corners of the globe, and by 1920, fifty million people had died in its wake. The scale and scope of this disaster made it a defining moment for the public health community, as researchers, advocates, and policy-makers scoured the pandemic for lessons to forestall future disasters. In a 2004 *New York Times* bestselling history of the 1918 pandemic, John M. Barry presciently wrote about the importance of trust in pandemic response. The key lesson learned from 1918, Barry writes, is that "Those in authority must retain the public's trust. The way to do that is to distort nothing, to put the best face on nothing, to try to manipulate no one." Without public trust, Barry argued, societal leaders would be unable to encourage the collective behaviors necessary to stop future pandemics.[1]

Public trust, however, is a complex phenomenon. First, it has many dimensions that can affect societal responses to a global pandemic. People's trust in each

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other, in medical professionals, in the health care community, and in public leaders helps shape how they experience, understand, and respond to a public health crisis. Second, all these aspects of public trust exist in a mutually dependent, dynamic relationship with public health leaders' responses to a pandemic. In other words, public trust is both cause and consequence of the choices that societal leaders make about the pandemic: what policies they implement, what guidelines they enact, what behaviors they recommend.

A key dimension of public trust during a pandemic is, of course, trust in science. During the COVID-19 pandemic in the United States, whenever public health leaders have promulgated new guidelines or tried to make sense of the pandemic for the public, they have explicitly relied on information and guidance from scientists. On one hand, news about trust in science is good. Data from the General Social Survey show that scientists continue to be some of the most trusted figures in the United States, second only to members of the military.[2] Other data from Pew Research Center demonstrate an overall increase in confidence in scientists generally and medical scientists specifically during the early months of the pandemic.[3]

But there is troubling news too. Although historical data reveal overall stability in the general public's levels of trust in science, the relationship between trust in science and partisan identity is shifting. In 1975, Gallup asked Americans about their confidence in science and found that 70 percent had either a great deal or a lot of confidence in science. Republicans reported slightly higher levels of confidence in science than Democrats: 72 percent to 67 percent, respectively. However, that relationship has since flipped. In 2021, Gallup found that overall confidence in science had declined slightly from 70 percent to 64 percent (note that other surveys, such as the General Social Survey, find greater stability). But there was a dramatic shift between political parties. Now, according to Gallup, 79 percent of Democrats report having confidence in science, while only 45 percent of Republicans say they have either "a lot" or "a great deal" of confidence in science.[4]

Anecdotal data indicate that a lack of trust led some people to be uninterested in or downright hostile to the scientific consensus regarding public health behaviors recommended to slow the spread of COVID-19.[5] For example, many Americans hesitated or refused to wear masks, despite recommendations from public health experts. These choices had real consequences. Early research showed that states with lower rates of mask wearing had higher rates of COVID-19.[6] Americans may trust science in the aggregate, but that does not mean that they will listen to scientists' recommendations when it comes to issues like pandemic response.[7]

Understanding the relationship between trust in science and the public's response to the pandemic requires better data that allow us to examine variation across people over time. Thus, early in the pandemic, we launched a

unique nationally representative panel survey, conducted in April 2020, July 2020, November 2020, and July/August 2021. By surveying the same group of people at these four points, we were able to observe the stability and change in their views and assess the factors that shape variation between and across groups. Throughout our analyses, we use two key measures: trust in science and support for evidence-based public health measures to prevent the spread of COVID-19.[8]

Our survey allows us to explore three key questions. Does trust in science even matter, relative to the pandemic? What are the factors that shape people's likelihood of trusting science? What can we do about the persistent partisan gap in trust in science?

The exigencies of the coronavirus pandemic created one of the most uncertain historical moments the global community has faced. The world economy shut down, leaving people stranded in their homes, unmoored from the everyday workplaces, relationships, and patterns that shaped their lives. In this precarious moment, the scientific community confronted uncertainty by applying scientific tools to understand what was happening, and to determine what could be done to help the world return to normal. As the science developed, many governmental leaders around the world chose to issue public health guidelines based on recommendations from scientists.

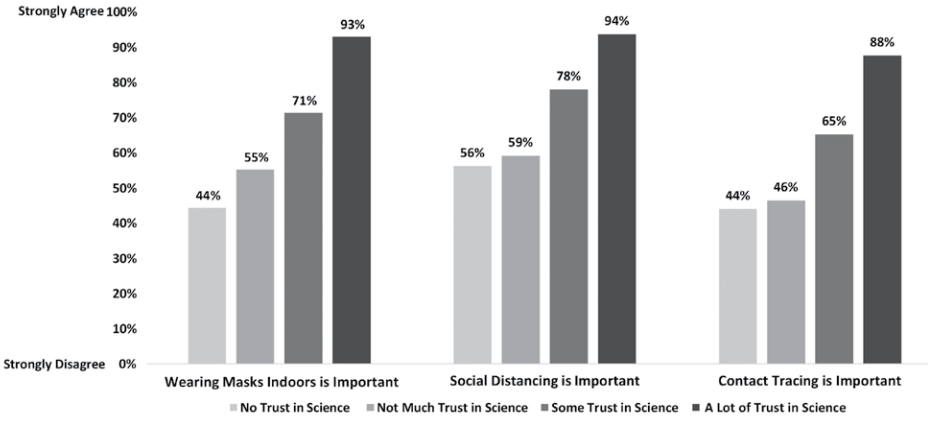
In the United States, how would the general public's regard for the scientific community affect their willingness to adhere to these guidelines? We know that people who have lower trust in science are less likely to believe the perspectives held by scientific experts (for example, that climate change is caused by humans).[9] But do these patterns hold when people need to make personal decisions that affect their own health and safety?

Throughout the pandemic, public health leaders have consistently recommended mask wearing, social distancing, and contact tracing for mitigating the spread of COVID-19, and in the aggregate, Americans have remained highly supportive of all three measures. For example, while overall public support for social distancing dipped from a high of 89 percent in April 2020 to 79 percent in July 2020, support for both social distancing and mask wearing remained above 75 percent throughout 2020 (and just below 75 percent for contact tracing) in our sample.

But people who did not trust science were much less likely to support any of these measures. In Figure 1, we present the average level of support for each of these public health measures, based on respondents' self-reported level of trust in science. The patterns are clear across all three measures: the more people trust science, the more likely they are to support public health guidelines.

Consider support for mask wearing. Overall, survey respondents reported generally high agreement that mask wearing was important.[10] But that support var-

Figure 1
Average Support for Public Health Measures by Trust in Science, Pooled Survey Data from 2020



We collected data about mask wearing and contact tracing in July and November 2020. Data about social distancing were collected in April 2020, July 2020, and November 2020. Respondents were asked to what extent they agreed that select public health measures were important for controlling the spread of COVID-19. Source: Authors' calculations from the Johns Hopkins COVID-19 Civic Life and Public Health Survey, https://snfagora.jhu.edu/project/the-johns-hopkins-covid-19-civic-life-and-public-health-survey.

ied a great deal among people based on their level of trust in science. Among the subset of respondents who reported "a lot" of trust in science generally, average support for mask wearing was much greater than for those who indicated they did not trust science at all.[11] This divide across levels of trust in science emerged consistently across support levels for all three public health measures. Since a handful of people forgoing recommended safety measures can lead to significant spread of the disease, understanding the variation is important.

We used three other models to estimate support for mask wearing, social distancing, and contact tracing as a function of trust in science. This time, we included demographic and attitudinal variables in the analysis: race and ethnicity, gender, age, education, household income, political party affiliation, ideology, time spent participating in community organizations, and valuing helping out in the community, plus the five-day statewide COVID-19 incidence rate at the time of survey completion.[12] With this last measure, we wanted to capture objective variation in how the prevalence of the disease in someone's community might affect their views.

We found that people's trust in science had an enduring impact on their support for public health guidelines. The magnitude of the effect of trust in science eclipsed every other variable (including political party identification). As one example, in our model examining support for mask wearing, support among individuals who had "a lot" of trust in science was 34 percentage points higher than support for mask wearing among individuals with "no" trust in science. Partisan identities had an important but smaller impact. Identifying as a strong Republican, for example, lowered people's support for mask wearing by 21 percentage points, relative to those identifying as strong Democrats. This finding was consistent across all models examining social distancing and contact tracing.

Trust in science was not, of course, the only factor predicting varying levels of support for public health measures. In general, we found that non-White respondents and older people were more supportive of these measures relative to both White non-Hispanic respondents and younger respondents.[13] Similar to partisanship, people's ideological views mattered as well. Americans who were more conservative were significantly less likely to support mask wearing, contact tracing, and social distancing compared with respondents identifying as more liberal.

Putting the pieces together, we found that trust in science is strongly associated with higher levels of support for public health responses to the pandemic, even when accounting for individual attitudes and characteristics that potentially shape support for these measures. Even though these public health recommendations presented a less invasive request than some other measures such as vaccinations, people who did not trust science were less likely to support them. Americans who are skeptical toward science are less likely to support even low-burden public health measures. This pattern raises the question of what attributes are associated with people's trust in science.

Certain kinds of people may be more likely than others to trust science. One person's level of trust in science may also change over time, such as when scientific consensus evolves quickly, as it did when scientists learned more about COVID's transmissibility during the early stages of the pandemic. We wanted to understand both phenomena. No matter how we examined the data, the strongest pattern that emerged was the persistent role of partisanship and ideology in shaping levels of trust. Though science is widely considered to be a politically neutral way of identifying truth and facts about the world, our data show that people's trust in science is highly conditioned by their own politics. Republicans and conservatives were consistently less likely than Democrats and liberals to trust science, and Republicans' trust in science eroded over the course of the study.

In general, Americans' aggregate levels of trust in science remained relatively stable during our study. Scientists worked rapidly and diligently from the onset of the pandemic to understand and ultimately develop defenses against COVID-19.

Although Americans experienced changing information and guidelines as scientific understandings evolved, most Americans retained stable views toward science (see Figure 2).[14]

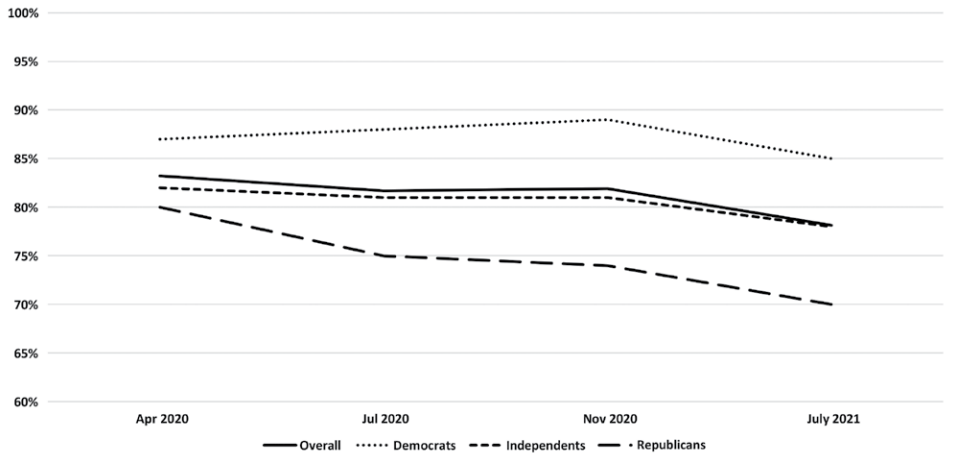
However, while average levels of trust in science were stable across the study, there were important partisan differences. Overall, 22 percent of the respondents reported decreases in trust and 10 percent of the sample reported increases. If we examine people's responses in each of the four waves of our study, we find that only 51 percent of respondents reported the exact same level of trust in all four waves. With respect to differences in party affiliation, we find that Republicans reported consistent declines in their trust in science during the pandemic, while Democrats and independents remained relatively stable. As Figure 2 shows, there was a clear pattern of declining trust among Republicans over time, culminating in a statistically significant decrease of 11 percentage points between April 2020 and July 2021. In other words, Republicans drove the overall decrease in trust during our study.

To dig deeper into the relationship between politics and trust in science, we wanted to compare the role of partisanship relative to other factors in explaining people's varying levels of trust in science.[15] We found that, on average, women expressed lower levels of trust in science, as did respondents identifying as either Hispanic, Black and non-Hispanic, or other and non-Hispanic, relative to White and non-Hispanic respondents. Individuals with college degrees reported greater trust in science than those without college degrees. Respondents in the highest income tercile (greater than $85,000 per year) also reported greater trust in science compared with those in the lowest tercile (less than $40,000).

The bulk of our investigation focused on the relationship between people's political views and their levels of trust in science. Partisanship refers to the political party with which people affiliate. Ideology refers to the liberalism or conservatism of their views. Today, people who are conservative also are more likely to identify as Republican, and people who are liberal are more likely to identify as Democrat (that pattern is very consistent in twenty-first-century America, but it has not always been the case; until the mid-twentieth century, for instance, a number of conservative Southerners identified as Democrats). We included both ideology and party identification as predictors of trust in science in our research and examined how these relationships changed over time.[16]

In general, we found that Republicans and conservatives were less likely to trust science, and that Republicans became less trusting of science over time.[17] When we examined how ideology and partisanship interacted with time, we found that partisanship was the only predictor that had a statistically significant interaction with time at each point of data collection. In particular, we found that levels of trust among respondents identifying as Republican decreased by our second wave of data collection (July 2020) compared with other respondents, and that this gap held through the remainder of the study.

Figure 2
Average Trust in Science by Party Identification, April 2020 – July 2021



Respondents were asked prior to joining our panel survey for their party identification. We then treated this one-time party identification as constant throughout the panel survey. Source: Authors' calculations from the Johns Hopkins COVID-19 Civic Life and Public Health Survey, https://snfagora.jhu.edu/project/the-johns-hopkins-covid-19-civic-life-and-public-health-survey.

Politics matters, at least when it comes to people's trust in science. Although we were unable to disentangle fully the relative roles of ideology and partisanship, we can see that these political identities shaped the ways in which Americans have responded to the pandemic, and, as we discussed in the previous section, the extent to which they have supported key public health recommendations. As suggested by recent studies, the partisan and ideological gap in trust in science is not new to the current public health crisis. The persistence of the gap in trust between political parties through 2020 and 2021, however, suggests that these gaps are relevant even when scientific recommendations can have material benefits for people, such as protecting them from disease.

Whither trust in science? Democrats and Republicans clearly differed in their levels of trust in science during the first eighteen months of the pandemic. So where do we go from here? Changing people's partisan identities is notoriously hard to do, but perhaps we can dig more deeply into the places where people get their information to see whether there are pandemic-related information sources that do not evoke strong partisan reactions.[18]

We examined how people's sources of information about the pandemic related to their levels of trust in science, and how those relationships changed during our study. We found that trust in institutions most enmeshed in the hurly-burly of national politics in America exhibited the biggest partisan gaps. Those institutions that remained above the fray of national politics – namely, local government officials and state and municipal health departments – were most likely to emerge as potentially stable sources of trust over time.

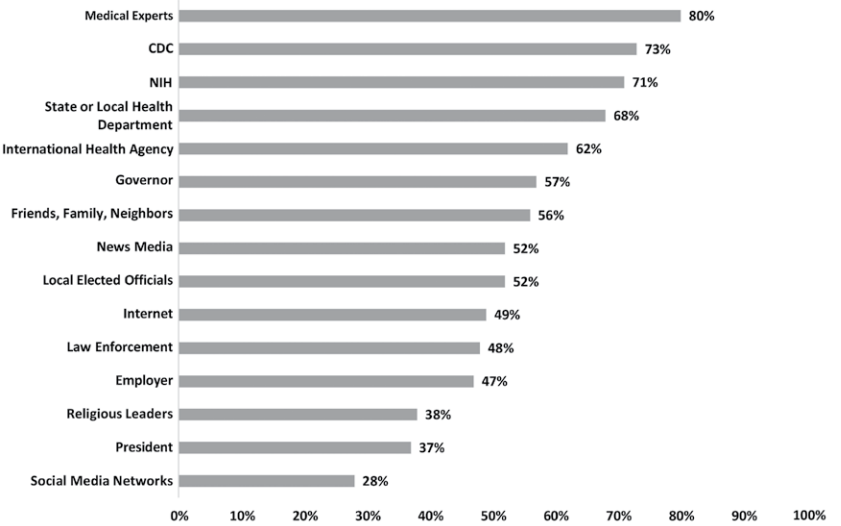
People turned to many different sources for information about the pandemic, from medical experts and public health agencies to elected officials, news media, and their personal social networks. When we examined Americans' trust in fifteen different sources for accurate information about the pandemic, we found that, overall, they reported the highest levels of trust in medical experts and public health agencies, including national institutions like the Centers for Disease Control and Prevention (CDC) and the National Institutes of Health (NIH), and international health agencies, as well as their respective state and municipal health departments. Trust in elected leaders, people's personal networks, and news media ranked below health agencies and medical experts (see Figure 3).

When we examined the association between trust in the fifteen sources of pandemic information in Figure 3 and trust in science generally, we found that thirteen of the fifteen information sources had a statistically significant association with trust in science.[19] Americans who placed higher trust in an institutional information source (such as the CDC, the NIH, and law enforcement) also had greater trust in science. Trust in social media and the president were the exceptions, though the latter is largely due to the change in administrations. Trust in the president predicted lower trust in science in 2020 and higher trust in 2021.

Trust also shifted over time. Across the four waves of our survey, we found that Republicans' trust in four information sources – medical experts, the CDC, the NIH, and international health agencies – declined precipitously as the pandemic wore on. In this sense, Republicans stand out relative to the general population, for whom overall trust in most information sources was relatively stable.[20] Figure 4 plots trust in medical experts, the CDC, the NIH, and international health agencies as information sources over time for Republicans and non-Republicans. Republicans were nearly as trusting of medical experts, the CDC, and the NIH as Democrats and independents at the onset of COVID-19, but as the pandemic progressed, they became increasingly distrustful of these institutions, especially between the November 2020 election and July 2021.

Of particular interest, we found that the strength of the association between trust in science and four information sources increased during the course of our study: local elected officials, state and local health departments, news media, and international health agencies. Trusting these information sourc-

Figure 3
Average Pooled Trust in Pandemic Information Sources



We pooled self-reported trust in information sources across all four waves of data collection and then reported the average by information source. Respondents were originally asked to rate how much they trusted each source for pandemic information on a four-item Likert scale. We rescaled these responses 0–1, where 0 is "not at all" and 1 is "a lot." Source: Authors' calculations from the Johns Hopkins COVID-19 Civic Life and Public Health Survey, https://snfagora.jhu.edu/project/the-johns-hopkins-covid-19-civic-life-and-public-health-survey.

es predicted even greater trust in science as the pandemic progressed. For example, if we imagine that people can trust science anywhere from 0 percent (no trust) to 100 percent (absolute trust), Americans who trusted local officials more reported more trust in science in April 2020. Specifically, Americans who reported high trust in local officials reported, on average, 87 percent trust in science compared with 78 percent among those with no trust in local officials. In July 2021, respondents with high trust in local officials reported, on average, 91 percent trust in science, compared with 71 percent among those with no trust in local officials.

Among these four information sources, local elected officials and state and local health departments stand out because overall support in them grew or remained stable over time, even when adjusting for partisanship. Trust in local officials grew over the course of our study – a relatively rare occurrence among the tested information sources. In the case of health departments, total trust was stable, and health departments consistently ranked as one of the most trusted sources of information about the pandemic. News media and international

health agencies, in contrast, either became somewhat less trusted as sources of pandemic information over time, or developed major partisan cleavages in trust (see Figure 4). Throughout the study, local officials and state and local health departments weathered the storm of dampened public trust (Figure 5).

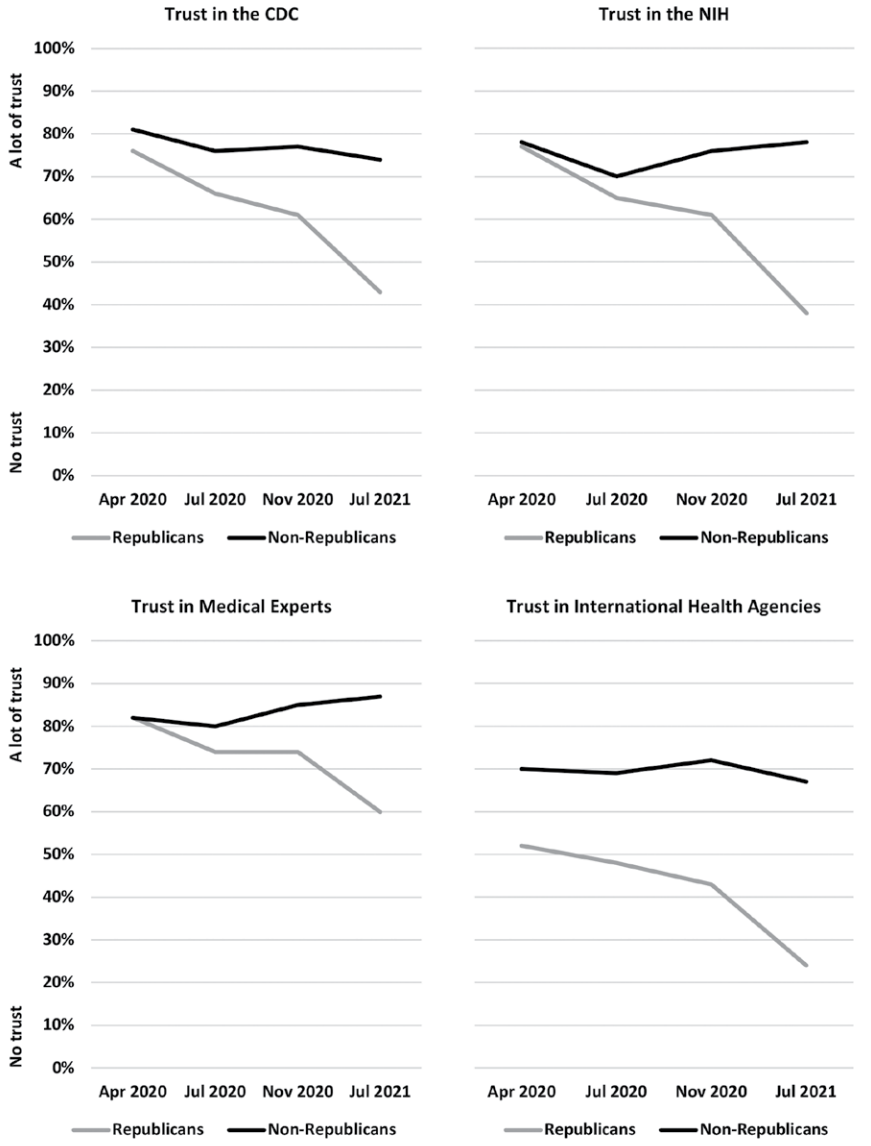
Untangling the causal relationship between information sources, trust in science, and partisanship remains tricky. But these analyses suggest that trust in local elected officials and local and state health departments has remained less susceptible to politics than other information sources. Reliance on those information sources is associated with trust in science as well. Putting the pieces together suggests that fortifying local information sources may be one avenue to explore for strengthening trust in science.

The role that science plays in any history of the global coronavirus pandemic will likely be two-sided. On one hand, the scientific community came together in an unprecedented way to develop public health guidelines and multiple vaccines to reduce COVID infection and mortality rates. On the other, even when the science was clear, the global community proved unable to convince everyone eligible to get the vaccine, or, in many countries, to persuade the public to adhere to the guidelines scientists recommended. In developing countries, inequitable systems of vaccine delivery served as the primary limitation. In the United States, however, one of the most important limitations has proved to be attitudinal. People who did not trust science concomitantly did not trust the solutions science developed, and many Americans continue to express skepticism and hostility toward the vaccines, even as the pandemic continues.

Perhaps even more alarming is the fact that our data showed that Republicans became even less trusting of science over the course of the pandemic. At first glance, that trust seemed to remain largely stable in the general population, but a closer look at the data reveals far more volatile partisan undercurrents. Republicans began the pandemic with levels of trust closer to that of Democrats and independents. But as the pandemic wore on, and especially following the inauguration of a Democratic president, Republicans' distrust separated them from Democrats and independents. This movement away from trusting in science appears to be part of a larger trend in recent years among Republicans and conservatives.[21] For the pandemic, the consequences of declining trust in science were clear. Republicans were consistently less supportive of public health measures that could protect them, their families, and their communities.

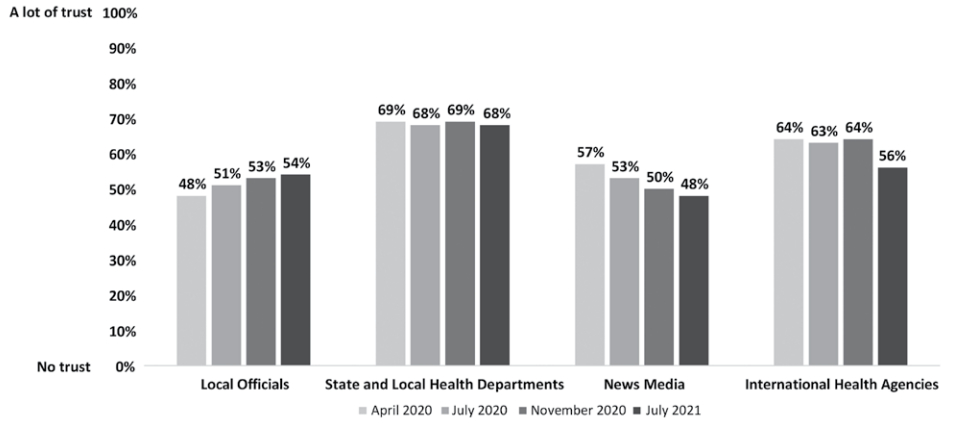
Divergent levels of trust in various information sources may help explain divisions in trust in science and support for public health measures. Trust in the CDC, the NIH, medical experts, and international health agencies as reliable sources declined among Republicans over time. Although disentangling the precise reasons for that decline requires more research, partisan attacks on scientific exper-

Figure 4
Trust in Pandemic Information Sources, Republicans and Non-Republicans



We adjusted for race, ethnicity, age, educational attainment (college degree), gender, household income, party identification, ideology, five-day statewide COVID-19 incident rate, valuing helping in the community, and time spent participating in a community organization. Respondents were asked how much they trusted a given source for information related to the pandemic: 0 corresponds to "not at all," while 1 corresponds to "a lot." Source: Authors' calculations from the Johns Hopkins COVID-19 Civic Life and Public Health Survey, https://snfagora.jhu.edu/project/the-johns-hopkins-covid-19-civic-life-and-public-health-survey.

Figure 5
Adjusted Levels of Trust in Local Officials, State and Local Health Departments, News Media, and International Health Agencies



We adjusted for race, ethnicity, age, educational attainment (college degree), gender, party identification, household income, ideology, valuing helping in the community, time spent participating in a community organization, and five-day statewide COVID-19 incident rate. See endnote 19 for more details. Source: Authors' calculations from the Johns Hopkins COVID-19 Civic Life and Public Health Survey, https://snfagora.jhu.edu/project/the-johns-hopkins-covid-19-civic-life-and-public-health-survey.

tise had clear consequences for trust in these institutions. The question we now must ask is whether lasting damage has been done to the field, and what the consequences will be if a significant and potentially growing share of the population views these institutions (and science more generally) with skepticism.

Americans' trust in local elected officials and state and municipal health departments stood out for their relative resilience to these political shifts, and also the fact that they became more associated with trust in science over time. This pattern suggests these messengers may be important for communicating scientific findings for the public. Once a Democratic administration took over the federal government, Republicans became more likely to distrust recommendations and information from federal scientific agencies. Yet local institutions retained public trust despite these partisan shifts. Perhaps federal agencies and institutions should enhance their partnerships with those organizations that continue to be trusted in their communities to reinforce or foster Americans' trust in science.

Many critics point to the content of science communication as a source of bumbling responses to the pandemic and crumbling trust in science, and often end with a call for greater accuracy and expediency, or the need for more nu-

anced and cautionary presentations of discoveries.[22] Our research underscores a long-standing finding from the study of political communication: the messenger matters. For instance, if local officials and organizations can remain above the fray of national politics, then perhaps we should also empower them to lead on scientific communications and recommendations in times of crisis. After all, Americans generally have greater trust in local government and institutions compared with their state and federal counterparts.[23]

Science will always remain critical to managing public health crises, and there is ample reason to think we will only be facing more crises in the future. To meet that challenge, science must be trusted as an impartial guide to the difficult choices societal leaders must make to manage crisis. When people perceive science to be partisan, science loses its ability to be that guide. Restoring trust in science remains an ongoing challenge. Just as John Barry presciently noted the importance of trust after the 1918 flu pandemic, perhaps the great lesson coming out of the COVID-19 pandemic is that trust in science matters more than ever.

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ENDNOTES

[1] John M. Barry, *The Great Influenza: The Story of the Deadliest Pandemic in History* (New York: Penguin Books, 2004).

[2] NORC at the University of Chicago, "The General Social Survey;" and Cary Funk and Brian Kennedy, "Public Confidence in Scientists Has Remained Stable for Decades," Pew Research Center, August 27, 2020, https://www.pewresearch.org/fact-tank/2020/08/27/public-confidence-in-scientists-has-remained-stable-for-decades.

[3] Cary Funk, Brian Kennedy, and Courtney Johnson, "Trust in Medical Scientists Has Grown in U.S., but Mainly Among Democrats," Pew Research Center, May 21, 2020. https://www.pewresearch.org/science/2020/05/21/trust-in-medical-scientists-has-grown-in-u-s-but-mainly-among-democrats.

[4] Jeffrey M. Jones, "Democratic, Republican Confidence in Science Diverges," Gallup, July 16, 2021, https://news.gallup.com/poll/352397/democratic-republican-confidence-science-diverges.aspx.

[5] Joel Achenbach and Laurie McGinley, "Another Casualty of the Coronavirus Pandemic: Trust in Government Science," *The Washington Post*, October 11, 2020, https://www.washingtonpost.com/health/covid-trust-in-science/2020/10/11/b6048c14-03e1-11eb-a2db-417cddf4816a_story.html.

[6] Charlie B. Fischer, Nedghie Adrien, Jeremiah J. Silguero, et al., "Mask Adherence and Rate of COVID-19 across the United States," *PLOS ONE* 16 (4) (2021): 1–10, https://doi.org/10.1371/journal.pone.0249891.

[7] Alan I. Leshner, "Trust in Science is Not the Problem," *Issues in Science and Technology* 37 (3) (2021): 16–18, https://issues.org/trust-in-science-is-not-the-problem-engagement-leshner.

[8] Our Johns Hopkins COVID-19 Civic Life and Public Health Survey measured trust in science for each wave by asking respondents whether they trusted science "a lot," "some," "not much," or "not at all." We scaled these responses 0–1, with 0 representing "not at all" and 1 representing "a lot." We also asked respondents to what extent they agreed that wearing masks indoors, social distancing, and contact tracing were important for slowing COVID-19 transmission. Responses were initially coded on a five-point Likert scale, where 1 was strongly agree and 5 was strongly disagree. We rescaled these responses 0–1, with 0 corresponding to strongly disagree and 1 corresponding to strongly agree.

[9] Matthew Motta, "The Dynamics and Political Implications of Anti-Intellectualism in the United States," *American Politics Research* 46 (3) (2018): 465–498, https://doi.org/10.1177%2F1532673X17719507.

[10] On the 0–1 Likert scale, average support was 82 percent in July 2020 compared with 81 percent in November 2020.

[11] Among respondents who reported "a lot" of trust in science, average support for mask wearing was 92 percent in July 2020 and 93 percent in November 2020. For those who indicated they did not trust science at all, average support for mask wearing was 54 percent in July 2020 and 38 percent in November 2020.

[12] It is worth taking a moment to discuss the role of religion in our analyses. At first, we presumed people's faith commitments would have a strong relationship to their support for public health guidelines. As such, we initially included two measures of religi-

osity in our analyses: religious attendance and identifying as a Protestant evangelical. Yet in this analysis, and all the other analyses in this essay, these explanatory variables did not demonstrate a statistically significant relationship with the outcomes. Because these variables were a source of significant missing data (25 percent of the sample), we ultimately chose to remove them from the models to be able to conduct analyses on our full sample. The results throughout the remainder of this essay reflect their exclusion from the models.

[13] Participant ages ranged from eighteen to ninety-two. We included age as a continuous variable and found that support for public health measures was significantly higher as participant ages rose (0.03 per ten years across all three public health measures).

[14] As Figure 2 shows, the average level of trust in science on a 0–1 scale was 83 percent in April 2020, 82 percent in July 2020, 82 percent in November 2020, and declined only slightly to 78 percent in July 2021.

[15] These analyses are based on cross-sectional multivariate models of trust in science as a function of the same social and political characteristics that we used to explore support for the three public health measures.

[16] We asked survey participants to describe their partisanship and ideology using seven-point Likert scales. For our partisanship measure, 1 corresponded with "strong Democrat" and 7 corresponded with "strong Republican." For our ideology measure, 1 corresponded with "extremely liberal" and 7 corresponded with "extremely conservative."

[17] Our multivariate models (with interaction terms for party and ideology) showed that average levels of trust among those who had conservative ideologies or were strong Republicans were 76 percent and 72 percent, respectively, during the pandemic, compared with 88 percent and 90 percent among liberal respondents and strong Democrats, respectively.

[18] Donald Green, Bradley Palmquist, and Eric Schickler, *Partisan Hearts and Minds: Political Parties and the Social Identities of Voters* (New Haven, Conn.: Yale University Press, 2002).

[19] These analyses were based on separate multivariate models that treated trust in science as the outcome measure, included an interaction term between survey wave and trust in information sources, and controlled for the same factors that we used in our previous analyses examining trust in science.

[20] By July 2021, however, overall trust declined slightly in many information sources, including the CDC and the NIH.

[21] Naomi Oreskes and Eric M. Conway, "From Anti-Government to Anti-Science: Why Conservatives Have Turned Against Science," *Dædalus* 151 (4) (Fall 2022).

[22] Richard Saitz and Gary Schwitzer, "Communicating Science in the Time of a Pandemic," *JAMA* 324 (5) (2020): 443–444, https://doi.org/10.1001/jama.2020.12535; and Molly A. Sauer, Shaun Truelove, Amelia K. Gerste, and Rupali J. Limaye, "A Failure to Communicate? How Public Messaging Has Strained the COVID-19 Response in the United States," *Health Security* 19 (1) (2021): 65–74, https://doi.org/10.1089/hs.2020.0190.

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