



Transcript for Addressing Racism in Medical Research and Publishing:

Aashna Lal

Welcome to “Addressing Racism in Medical Research and Publishing.” This is the fourth and final event in a series of online discussions for journalists this fall produced by the Hastings Center in partnership with the Center for ELSI Resources and Analysis (CERA), a federally funded project that builds the community of researchers focused on the ethical, legal and social implications of genetics and genomics. We are pleased to be joined by Vabren Watts, the Equity Director of Health Affairs; Mildred Cho, Professor at Stanford University, Associate Director of the Stanford Center for Biomedical Ethics, Director of the Center for Integration of Research on Genetics and Ethics, and Co-PI of the CERA; and Fernando De Maio, Director of Health Equity Research and Data Use in the Center for Health Equity at the American Medical Association, and Professor of Sociology at DePaul University. We hope for strong participation from the audience. Please type questions in the Q&A box at the bottom of your screen. You can also use the chat function to share relevant resources. This event is being recorded and will be available on the Hastings Center's website later today. It will also be available on CERA's website ELSIHub.org. Now I would like to introduce Susan Gilbert, communications director of the Hastings Center, who will say more about the annual journalism discussion series.

Susan Gilbert

Thank you, Aashna. Hello, everybody. The Hastings Center is a bioethics research institute that produces scholarly analysis and policy recommendations on a wide range of

ethical questions in health, health care and the life sciences. In addition to our research, we have an equal commitment to public engagement. This year, the Hastings Center launched an annual event series that we call bioethics for journalists. It is a set of discussions to help journalists identify ethical questions, ethics questions and pursue investigation of those questions on emerging topics in health and science. The series is part of the Hastings Center Center's Callahan Public Programs, named for our co-founder, Daniel Callahan. It is an initiative established and supported by The Andrew and Julie Klingenstein Family Foundation and the John and Patricia Klingenstein Fund. In honor of Dan, I'd like to express deep appreciation to the Klingenstein family for their vision and support. The theme for this year's series is Genomics in Society: New Developments, New Questions. We are fortunate to collaborate this year with the Center for ELSI Research and Analysis, a project led at Columbia University by Dr. Sandra Soo-Jin Lee and at Stanford University by Dr. Mildred Cho, who is one of our panelists. Dr. Cho is also a newly elected Hastings Center fellow. Many thanks to the CERA for this partnership. Today's event is on racism and unconscious bias in medical research and publishing. Researchers and journal editors are reckoning with this longstanding problem. Journalists who write or aspire to write about medicine look at journals for story ideas. The editors of those journals have an indispensable role in identifying and eliminating racism in the review and publication of research. What anti-racist steps are leading journals taking? What more should be done? What kinds of cues can help journalists recognize racial bias in a research article? It is my pleasure to introduce the moderator, Vabren Watts, the Equity Director of Health Affairs. In addition to being the leading Journal of Health Policy, Health Affairs has taken a lead in addressing racism and promoting equity in journal publishing. Dr. Watts was hired to help move these efforts forward. A former journalist, he has a background in research, science and health communications, and diversity, inclusion and equity strategy; he has a Ph.D. in pharmacology. Welcome, Vabe.

Vabren Watts

Hi, how are you doing there, I had a little problem turning on my camera. Thank you so much, Susan, for allowing me to speak at the session, as Susan said, You know, I come here actually from two different angles. One as a science and health journalist and another as a strategist for diversity and equity. As Susan said, you know, in 2020, I came to health affairs to actually lead their Diversity and Equity Initiative, known as advancing equity in research. And just to give you just a snippet of my thought process, I put it that way. When I came into health affairs, I just want to share some, some things with you. You know what we're doing and how we landed to where we are today as it relates to advancing equity. And so, you know. You all know that, you know, as we open with, you know, scholarly publishing is very important in academia. You know, they have a series like publishing a series of articles is often a factor that, you know, increases like a lot of things, your likelihood of tenure, your likelihood of grant. It's that whole publish or perish model. And it really positions you as an expert in the field as well as makes you, you know, more competitive for jobs, for promotions and as and as I say, this grant. And it brings not only recognition to you, but also recognition to your organization as well. So it's very important. So however, you know, there are disparities in scholarly publishing, and you know that that is a broad term. And I say disparities in scholarly publishing because it's many different types of disparities. One type of disparities is I would like to say, is funding disparities by institutions. Institutions with more research dollars are more likely to repeat publishing in high quality or high impact journals for, for instance, that you know, some of the top funded, you know, research institutions are the, you know, the top publishing institutions within health affairs. And then we also look at gender equity within scholarly publishing, where women are less likely than their male peers to publish, almost half as likely from data I would say at the beginning of 2020, when the pandemic set in full throttle, actually, it is predicted that this disparity gap has actually increased due to due to demands on women. You know, if their home like this, we were in quarantine, you know, they they had responsibility is to assume that they have more responsibilities at home. That sort of kept them from focusing on publishing and things like that. And then third is what I'm going to focus on today is really talking about racial disparities. Racial and ethnic minorities are actually ten times less likely than their white counterpart

researchers. And keeping that in mind, you know, I'm just going to go over like some of the reasons for racial for racial inequities in scholarly publishing. And we're first going to start upstream of publishing. Racially biased practices, this one, either consciously or unconsciously that often permeates organizations within the U.S. And as I said, I said unconsciously because I really do believe that for the most part, racial bias is unconscious. It's just that unfortunately, within the U.S., you know, there has been a foundation laid years before us, hundreds of years before us that actually still permeate into our systems today. And so this results in lower rates of research funding awarded to racially underrepresented researchers entering execution of the research plans by those researchers of color. Racially underrepresented researchers tend to propose research topics with lower award rates that focus on like community and population research versus the more fundamental and mechanistic investigation that tends to have higher award rates. And then we also have to play have to consider that there are there are sometimes also a lack of mentorship or collaboration offered to racially underrepresented researchers at their institutions, particularly those institutions where you may not have that many researchers of color. Now, I just named the reasons for racial inequities in scholarly publishing, and I will say, you know, at that point, you know, I did talk to yes, to my boss about this, I said, Well, you know, those are some things that we cannot control because, you know, when it deals with, with with addressing racial inequity, you have to tackle those things that you can't control. And you know, if everyone along the pipeline; starting to look for grants, I know the NIH has programs where they are looking at, you know, racial equity and grants. And then we're one of the first journalists to really look at racial equity as it relates to just within peer review publishing. So, you know, in order to do this, we had to, you know, notice some things or recognize some things that are going on. And so at the level of publishing, you may have rejection of manuscripts that use nonstandard methods for interpreting research outcomes. Different cultures have different ways of publishing methods and interpreting research across disciplines. You may have a lack of diversity among reviewers and editors. One of the things that we currently just completed in Health Affairs was actually a survey on a racial demographic survey and gender surveys of people who submit it to the journal over the past three

years. And really, you know, asking us are, you know, is our demographics actually, you know, racially diverse? And when we ask authors to review, is that also diverse?

Because we know that in certain situations, reviewers who identify with, I would say, a particular race or gender can sometimes pinpoint things in research that may be a little controversial or just need really a deeper dive to explain why they came up with that answer at the level of publishing. You know, it's, you know, it isn't like some people say, we really looked at, you know, is do we have enough outreach to researchers of color in minority affirming institutions that includes like our tribal colleges and universities? Our historically black colleges and universities, as well as our Asian American in America and in Pacific Islanders University. And and then you also have to we have to look, you know, internally with just introspectively, you know, and notice that research shows that there is a lack of diversity among those employed by scholarly publishing firms, actually.

Research was done by the IRB and Journal Library in 2016, which showed that around 90 percent of editors of peer reviewed journals actually identify as white. And then, you know, just then, most journals have a lack of data on demographics of authors, reviewers and editors. And as I said earlier, that's something that we just tackled with our survey, and we're making moves to actually do other things to actually address this, which I'll get into later. So, so where there is racism, only anti-racist systems can generate equitable results. That's where my editor in chief, Allen Weil. And so in in 2020, we received funding from the Colorado Health Foundation, as well as the Robert Wood Johnson Foundation to really look at equity, racial equity and propose a strategic plan to really advance equity in scholarly publishing. And we did this really focus in on three things and just quickly go over those with you. One was on equitable participation. We are a journal and you know, you think of journals, you think of authors, you think our viewers should think of, you think of editors. And so, you know, an equitable participations we're we're looking at, you know, if our authors, authors, reviewers and editors are diverse. So, you know, really increasing that based on race, ethnicity and other identifiers such as gender. In our end, we have been implementing this and you know, we are currently doing outreach to researchers of color for submission and review. We are building relationships with minority affirming institutions with health services, research programs because we

are a health services and health policy, peer reviewed research journal, and then also develop mentorship programs for equity researchers of color to expose them to Health Affairs and guide them through the publishing process of the journal, and I will say that I'm proud to say that we just actually selected our first cohort and during our first application cycle of our Health Equity Fellowship for trainee programs, which is for, you know, young scholars of color. We actually had 55 applicants and we selected 10 new fellows who would be coming in in January to really publish in our journal. And they will have multilayered mentorship, which really includes mentorship from Health Affairs authors who have published at least twice in the journal, as well as mentorship from the editorial staff at Health Affairs. Also, we are really focused on new voices and that is incorporating health equity research or research or program outcomes from institutions or community based organizations that have been historically not well represented within our journal. And that is forming partnerships with professional societies or programs that focus on advancement of health services, research, partnering with those community based organizations that that have programing intended to increase health equity and really expand promotion and marketing, particularly of health equity products, to those entities that target health service professionals and those communities of color. And then I always say this when you look at when you look at diversity, equity and inclusion strategy is actually two things that's going on. I would say the easiest will be the external, which is the first two points that I made. And one of the hardest is actually the introspection and that is addressing our own biases as part of a publishing enterprise. We have several things underway. One of those things include bringing in actually researchers of color who not only do health equity research, actually but really just exposing the staff, as well as exposing those researchers of color to health affairs that do health policy and health services related research. And it has been interesting thus far because those people who we have invited have actually sort of come into the fold of Health Affairs by serving as reviewers and really expanding our our resources for expertise on certain topics and issues. And just making sure that we are gaining perspectives from, you know, every everyone, regardless of age, race, gender and ethnicity. So, so some of the projects that we completed that I went over, we did do an

assessment of content. One of the things that when I came in, I did say that, you know, but before we start, let's see where we are now. I will say Health Affairs and 11 percent of our journal content over our 40 year history does reference equity with respect to race and or ethnicity. The second half of 2020, we had more than 45 percent of papers published related to race and ethnicity, that can probably be explained because that was really the midway point of 2020, that's where we were, where racism did play a huge part it was a popular conversation at the end of 2020. We will also be starting January 1st, 2022 tracking race, ethnicity and gender among authors so that we can continue what we see where we are as it relates to incorporating those voices and getting engagement from diverse populations. And then we had to do formation of an equity advisory committee to really help guide health affairs with advancing racial equity and to make sure that we are meeting the needs of the community of researchers that that we serve. So, with that, just to give you just the impact of advancing equity through scholarly publishing, it is just, you know, regardless of how a researcher self-identifies, the impact of publishing a health equity related manuscript in health affairs is more than just a professional accomplishment. It means that a researcher has identified an issue or successful method to advance health services that is critical in informing care to the general public or specific populations that are most burdened by failures in the U.S. health system. And I'm trying to take. Stop sharing. OK. All right, Miriam. Yeah, so, with that being said, you know was, you know, it's only things that you know we can do in the field of scholarly publishing, really to vet the research that comes through. But I ever, you know, Health Affairs gets over 7000 submissions per year, so some things go missed. But I will say as a speaking from a journalist, like you just really have to really critique each, you know, manuscript that comes across your paper that you want to turn into an article to make sure that the information is accurate. Because we know as a journal that sometimes the information can be controversial. And, you know, and we really have to, you know, scrutinize data before we publish it. So, I am going to move the program along with Fernando De Maio, Dr. Fernando De Maio, who is with the American Medical Association, who I will say also, I had the pleasure of sitting on a panel with him, and he's actually submitted a blog post, which was published in April 2021 in Health Affairs that

actually talked about the use of the term racism in medical literature, which was an awesome paper. So it's just a plug, if you have not read that paper, please view it in Health Affairs in April 2021. Without further ado, I will introduce to you, Dr. De Maio.

Fernando De Maio

Right. Thank you so much, Dr. Watts. It's a pleasure to see you again and huge thanks to the Hastings Center for bringing us together for this important conversation around racism and medical research and publishing. So as Dr. Watts mentioned, I'm Fernando De Maio. I serve at the American Medical Association as director of research and data use, and my academic appointment is at DePaul University, where I'm a professor of sociology and teach social epidemiology in our public health program. I want to show just a few slides to contribute to the conversation, and I very much look forward to the question-and-answer period of the event. So, I want to begin with a very old example, probably the oldest data you will see today. This is from 1926, a piece that I republished in the book called Community Health Equity, A Chicago Reader, which I edited with some fantastic colleagues Raj Shah, John Maggio and David Ansell a few years ago. So, this is The Chicago Tribune 1926, the broad headline from a well-intentioned journalist. "This is the world's healthiest city", and the journalist reported data that have just been published from the public health department, showing that Chicago had the lowest death rate per 1000 people. It's kind of small, it's in the red box, but it had the lowest death rate per 1000 people compared to Berlin, New York City, Vienna, Philadelphia, my home city of Buenos Aires and Paris. And then they also added Bombay and Calcutta as reference points. But this was the headline. This is the world's healthiest city, and it is. The story concludes that to live in Chicago is a safeguard. It's a form of life insurance, but has certain advantages over insurances and cost nothing extra, and everyone benefits during his own lifetime. And I'm sharing this example because the remarkable thing that happened the following year. A sociologist named Rachel Harris published this remarkable piece in the American Journal of Sociology, saying that the headline was true, but only if we looked at aggregate deaths. If we looked at Chicago death data overall, if we disaggregated between blacks and whites, a profoundly different story

emerged. This was not published by the Public Health Department in the original report. It was not captured by the journalist in the Chicago Tribune. But it was unpacked right in the in the conversation the following year by Harris. The white rate was lower than many other cities, but the black rate was profoundly high. And that's the story that we've been retelling over and over again for four decades ever since. And in many ways, it's the same story that I told in this book called Unequal Cities, which I published earlier this year with Maureen Benjamin in Johns Hopkins University Press. I want to show you a little bit of the data and then kind of unpack what it means in terms of our understanding of race versus racism as a determinant of health inequities. So you'll know that across the United States, our life expectancy on average for everyone combined is in the high seventies - seventy eight point six in this time period of 2013-2017. Of course, now we know that this has taken a hit as a result of COVID. But what we don't know, because we typically don't present data in this way, is the 10 year gap that exists just on average on aggregate between our healthiest and least healthy cities between San Francisco and San Jose, where life expectancy is in the low 80s, eighty two point nine. And Baltimore, Maryland, where life expectancy on average is seventy two point nine. Just like Harris did in 1927, we disaggregate the data by race, looking at differences, broad differences between blacks and whites. The four-point four-year gap across the United States. And for us, really importantly, the variability across the cities. So the 12 year gap in Washington, D.C. and the negligible black advantage in life expectancy in El Paso. Boston, Jacksonville, San Jose have far smaller gaps, and my home city of Chicago, where the gap is over eight years. Now, there's nothing natural about this and understanding the dynamics, the variability, how this varies across places and also across time for us is really profound and it gives us a sense of the local and state policies that drive these inequities. A bit more data across the country, and we can look at the all cause mortality rate ratio, if things were equal, if things were equitable, we would have a one to one relationship between the black and white rate. Overall, the black rate is 23 percent higher. The rate ratios one point two three. And it varies just like life expectancy did, it varies across cities where the gap and in Washington is more than two times higher than the white rates. This culminates in probably the most important metric that we

try to communicate and that have been picked up by journalists in different settings on excess deaths, the number of people every year who die prematurely as a result of inequity. So this varies across cities, and it's a function of two things the relative gap between the two groups and the size of the black population. So again, my home city of Chicago here fares worst of all in the analysis and again, this is a story that is kind of echoes across time, both in the academic space, whether it's in books or articles, and there's lots of examples that we can come across. And also in the Journal of Space. So this was the cover of the Chicago Sun-Times. Health care gap kills 3200 black Chicagoans a year, and the gap is growing. This was from 2009, based on a study published by Maureen Benjamin. And the group that I collaborate with. So our deep challenge both as researchers, medical professionals, public health professionals and journalism is how to advance this story. So it goes from describing problems, describing inequities to really understanding the sources of those inequities because we could have, and we have lectures, books full of of how race and racism manifest in health inequities. Right. So the same story could be told for heart disease mortality, breast cancer mortality, stroke, all of the major killers in society. Our challenge, we think, is to tell a deeper story about these downstream effects, these mortality indicators, whether we're looking at life expectancy or infant mortality or cause-specific mortality like cancer, heart disease, stroke and so on. But really track upstream going beyond stories to look at differences between people based on their risk behaviors and individual beliefs and behaviors to looking at the living conditions, increasingly are called the social determinants of health, the characteristics of the places in which we live, work and play. But then even further, upstream right to the root causes of these inequities. And this is where we get to far more difficult things to measure: white supremacy, racism, classism, sexism, homophobia, ableism, xenophobia and more. So this is where we think and they mentioned this before, this is where we're really where we're seeing a remarkable challenge being raised in medicine and public health. So with Rhea Boyd and Nancy Krieger and Elisa Maybeck, we did these two analyzes, though one came out in Health Affairs blog and the other came out in Time. The world's leading medical journals don't write about racism, and that's a problem. And it was based partly on our own personal

experiences, having gone through the publication process in different in different places of different contexts. And then also hearing about the stories that our colleagues had also experienced. So we tried to do a very simple, descriptive task and we looked into the into the literature. So we saw a dramatic increase in the number of articles that just include the word racism in 2020. Huge explosion in the British Medical Journal, in the Journal of the American Medical Association, New England Journal of Medicine and The Lancet all saw an explosion of papers in 2020. And the same with our own kind of comparison the American Journal of Public Health, which had a longer history of publishing articles that even just mentioned the word racism since 1990, but they'd also seen a remarkable increase in 2020. When we look deeper into what was happening within the medical journals, and this kind of reinforced our own experiences, we found that the vast majority of the papers that even said the word racism were really viewpoints, commentaries, kind of opinion pieces, opposite the empirical papers, the science right, the data driven papers and the introduction method result in discussion. Very few of them actually used the word racism even in the discussion, and the small, very small minority can count them on your hand actually had them and the methods or the results that is incorporated, the data, the science of the study of racism in society. And we think this is really important and we applaud and celebrate health affairs efforts to try to overcome this in the future. Our article concluded like this, that if we as medical and public health professionals cannot name and confront racism as a root cause of racial health inequities, it profoundly affects what the broader public knows and doesn't know about the racial distribution of health and disease and its social causes. It is past time for the world's leading medical journals to name racism, publish evidence on how racism harms health and articulate how dismantling racism can prevent racial health inequities. And one of the tools that we've developed to try to do this right, to try to move this forward is this new guide that we just co-published between the AMA and AAMC Center for Health Justice "*Advancing Health Equity, a guide to language, narrative and concepts*" is structured into three parts. The one is about language. Second is about narratives and then the bulk of the document, which I think is about 54 pages, the bulk of it is actually a glossary of key terms providing accessible and we think helpful definitions of more than 140 key terms and concepts that

are frequently used in health equity discussions. I was supported with a piece from our AMA president, Dr. Gerald Harmon, noting that our words matter, it's time to get them right. And it was meant to be not an act of language policing, but it's meant to be a guide. It's meant to be a resource to push our understanding and awareness of how words, language and the underlying narratives influence through our work, both as researchers, as authors and potentially for U.S. journalists as well. You will have undoubtedly seen that the reaction to it has been quite negative in many quarters. It initially started in a very right-wing websites like Infowars. You can tell, so you could tell they didn't like the document because both health equity, racism and white supremacy were in quotes in their title. But it also was mirrored in many of the critiques raised in The Washington Post, the New York Post and The Atlantic. And then further in Fox News and other places. So for us, this is a really important conversation to have, even if it's uncomfortable for many people recognizing that our very capacity to understand racism in society is deeply impacted by our culture with language, right? And so for us, this is really important. So all of our phrasing, race relations, racial chasm, racial justice, racial profiling, white privilege and white supremacy serves to obscure that racism as a visceral experience, that it dislodges brains, blocks airways, rips muscle, extracts organs, cracks bones, breaks teeth, Ta-Nehisi Coates advises never look away from this, you must always remember that the sociology, the history, the economics, the graph, the charts, the aggressions, the language right, all lands with great violence upon the body. So we see this in our population health indicators, and we're trying to develop better tools by which we can acknowledge the social construction of race, right? Decrying racial essentialism, in fact we have new American Medical Association policy officially acknowledging the racial social construction of racial categories and officially moving for the at the end of the use of race in very simplistic ways and medical algorithms. Right. Moving away from that and moving towards a deeper understanding of racism as a root cause of health inequities. Race is not a risk factor, but racism is a cause, a root cause of health inequities that we see across our population. Health indicators and perhaps the last word that our comes from Dorothy Roberts, who we feature in our advancing health equity guide. She notes that race is not a biological category that naturally produces

these disparities because of any kind of genetic difference. Race is a social category that has staggering biological consequences because of the impact of social inequality on people's health. She gave this charge. What if doctors join the forefront of the movement to end the structural inequities caused by racism, not by genetic difference? The very first data that I showed you the life expectancy variability between Baltimore and Washington, Baltimore and San Francisco and San Jose, that cannot be explained by any genetic model. This is the story of structural racism as lived experiences in our cities as manifest in the history in that we carry in our bodies. So for us, this is a really important and critical area of research and scholarship and conversation that we want to have, not just as an academic research community, but as a broader community with journalists and readers of all kinds. So I think I'll stop there and I know have a fantastic rest of the panel coming up.

Speaker 2

Vabren Watts

Thank you so much, Dr. De Maio, first for affording us all the wealth of information that you gave and thank you for everything that you're doing. But now let's turn it over to Dr. Mildred Cho, who is a professor at Stanford University. She is the associate director of the Stanford Center for Biomedical Ethics and the director of the Center for Integration of Research and Genetics and Ethics.

Speaker 1

Mildred Cho

Thanks, Vabe. See if we can see on the screen here. How's that look for everybody? Yes. OK, so thank you for inviting me, Susan, in the Hastings Center and as Susan mentioned, I am a co-director of the Center for ELSI Resources and Analysis, but I'm also speaking here today, informed by the work I've done as an editor on the editorial board of the journal *Genetics in Medicine*. And I think what Vabe and Fernando have talked about, is a nice lead in here because I think it really highlights those previous two talks highlight how race and ethnicity and racism are used differently in different fields like public health, like health services research, sociology and also clinical research, genomics research, and in biology. And I think one of the things I'd like to do is encourage us to really drill down and be aware of these differences as people who are

involved in publishing and writing about race, ethnicity and racism, and also question and examine these variables as scientific variables. So, as you know, we use race and ethnicity in medical research all the time. But it is useful to think about why, and question, why do we use these categories? And part of the answer is that we've always done that. It goes back. It's a tradition now. But based on this idea that the differences between racial and ethnic groups can reveal differences in disease, disease frequency, drug response and all kinds of things, diagnostics and therapy. And so we use these categories to guide treatment and diagnosis. And I have a quote here from an article that is making this argument. In response to this, I wrote a paper back in 2006 in response to the argument that we shouldn't throw the baby out with the bathwater, we shouldn't get rid of race. And while I would argue that it's not racist to use racial and ethnic categories *per se* in biomedical research, if it's not done properly and without adequate justification and examination of how it's used, it can be racist. And so I would like to argue that the differences between groups is not what is in question. There are clearly differences between groups, no matter how you slice the groups. But the question is whether those differences and if they're clinically significant, do they actually map onto racial and ethnic boundaries, however they are defined? In addition, I would also like to point out that it's it is very difficult, if not impossible, to actually identify a sort of consensus or single accepted set of racial and ethnic categories. We usually can't even define what race or ethnicity means. And so this makes these variables very difficult to deal with in a scientific context. They're very imprecise and nonscientific, and I would argue that we use these categories in ways that we do not allow ourselves to use other kinds of categories or variables in science. And so this and also, I think what's dangerous and what I think Vabe and Fernando alluded to is that relying on racial ethnic categories can, if used improperly, distract from other information that might actually be more relevant to the research question or such as environmental factors or social factors, including racism. So I just want to point to some articles as references, and I have a list of references for people to refer back to later if you want to get the full citations for these. But there are many different attempts now at dealing with race, racism and race and ethnicity in medical publications. This one is one that I wrote with coauthors who are also

on the editorial board of the journal *Genetics and Medicine*, Kyle Brothers and Robin Bennett. Research groups are also issuing guidelines on use and reporting of race, ethnicity and ancestry in genomics research and precision medicine, as well as biomedical research more broadly. And I just wanted to mention that the work that we did for the journal *Genetics in Medicine* was very influenced by this article written by Rhea Boyd and colleagues in 2020. So don't worry, all of these references are here, and so I just want to talk about what's at stake here. There are lots of things at stake. One of them is focusing, overly focusing, on race as a as a marker of, for example, drug response. So in this quote from an article that I mentioned in the previous article that I had mentioned that I wrote, it talks about a differences between Europeans and Japanese and loss of function variants in in a locus responsible for metabolism of drugs. But then later in the paper, although you would then sort of conclude that European versus Japanese ancestry might be associated with drug metabolism and thus guide pharmacogenomics. Later, in the paper, they talk about a similar level of variation even within Europe, so people from northern Spain versus those in Sweden. So it pays to be careful about how you interpret these kinds of results. Many people have also written about how misdirection of attention to race can be caused by focusing overly on racial categories as opposed to disease, state or symptoms or other kinds of categorizations like nationality. So, for example, the highest rates of sickle cell disease are in some areas of Africa, although there are also areas of Africa, including western Africa, which have relatively low rates of sickle cell disease or trait, but very high areas in some in some parts of India, Sicily, Greece or southern Turkey. So if you focus overly on Black Race or African Americans in the United States, you could easily be missing a diagnosis of sickle cell disease. Another issue is that the racial and ethnic classifications and the way we ascertain them lead to huge inconsistencies. And so from I just give you some data from an article that was written 20 years ago, a study of US census data of those that indicated Indian ancestry or birthplace in India on the census. 10 percent of those identified themselves as white, black or American Indian, despite instructions to directing them to the Asian Indian category. Those who spoke English only were associated with higher likelihood of self-identifying as white or black as opposed to Asian, and those of

Indian national origin were more likely to select black, while those of Sri Lankan or Pakistani origin were more likely to select white, 80 percent of children with one white and one Asian parent in the census were listed as white. So you can see how inconsistent these categories can be even by self-report. Another example of that inconsistency is in comparing visual identification by police in the United Kingdom with predicted classifications by genetic analysis of STRs at loci. And they were only consistent 67 percent of the time, so two thirds of the time. And the classification by this kind of analysis, as Middle Eastern by genetics, was consistent with the visual identification by police only 30 percent of the time. So again, another example of how we are not even sure, it really depends on how you ascertain these variables in terms of what answer you get. So what can journals and writers, authors, researchers, editors and others do about this? There are many things that Vabe has also mentioned, that the Journal of Genetics and Medicine has already initiated, including encouraging authors to examine their citation practices. So as Vabe mentioned, there are huge disparities in publication by race, but also in terms of who gets cited. But another thing that we're trying to do at the journal Genetics in Medicine is really think about how to get reviewers of journal articles since they are the gatekeepers of publication in biomedical journals to really shift their thinking on how they review. And so we are trying to think about providing reviewers with training on how to review not just the language that is used in the manuscripts that they review, but study design methods, the claims, the limitations throughout the entire article. So, for example, is the use of race or ethnicity even justified as a variable? We do it as a sort of knee-jerk reaction. We think we're required to do it, but maybe we're not. Maybe race or ethnicity really has nothing to do with the study that is being done and the inclusion of it does imply that it is important and also can imply that it is a biological variable. However, using race or ethnicity as a biological variable is highly problematic, as many people have argued and given examples of. And also, it is important to question whether there are other important variables that were not studied that are likely to be associated with or even a cause of conditions that are in question. And finally, something that can be done by journals that goes beyond the reviewing process is to encourage authors to engage in research

that engages racism as a subject of study and then publish it. Vabe also mentioned this and spoke about how his journal is working on this issue. And part of this is also a reexamination of how articles are prioritized for publication by really rethinking what we consider to be novel or significant. So at the journal *Genetics in Medicine*, we actually rewrote our mission statement because it implied that articles that were examining questions that may have been asked in populations such as white populations or European populations that did not use those populations would not necessarily be prioritized. If the answer to the research question had already been asked in a white or European population and therefore would not be considered novel because it would be sort of not a new research question and therefore not significant. And so the Journal has rethought that stance in order to encourage researchers to broaden their sampling to understudied and underrepresented populations, which we all know are highly problematic in terms of the conclusions and the clinical implications thereof. So I will stop there and I think we can get into the discussion.

Vabren Watts

Yes, yes, thank you so much, Dr. Cho, for that information was very eye opening and a lot of things that I have not viewed before; thank you for it for that data, and thank you as well, Dr. De Maio. You know, as before we go into, you know, questions from the audience, it was some questions, you know, that I would like to ask. So I would just like to ask the audience to start submitting your questions now. But before we go into some questions, some things I want to touch on and that is in this question is for either one of you, as both of you touched on this. How much do politics and the political climate effect efforts to address the racism in medical research and publishing?

Fernando De Maio

To go first on a very difficult question. Yeah, it has a huge effect, right? And you can think of the political climate in very different ways, though, at a national level, at an institutional level, at a disciplinary level, right within your own community of scholarship and work. And all of them intersect and interact in important ways. But I think what we're seeing

also, even in the most difficult climates and the most stifling climates in terms of creativity and forward thinking, research, design and language, there's always moments of resistance, right, of change. There's always opportunities to reflect and refine our methods, to question the assumptions under which we operate, whether it's in terms of research, design, the racial categories that Mildred just spoke about, the statistical techniques that we use to look for differences between groups and the very language that we use, the framing of our questions. There's always opportunities to do that. I think moving forward, that's one of our most important challenges to strengthen regardless of the political climate, the opportunities for reflection and refinement and improvement. Because all of our work can always get better on these points, there's all kinds of assumptions that we take for granted, that we carry on with us in the very way that we think of our research questions and the way that we write up our results. But so that's an ongoing challenge.

Vabren Watts

I will piggyback off that something that you said that struck me. We're at a point now, and I always think about this, I'm sure all of us do. We're at a point now where racism was in the forefront. And what can we do actually just to continue the conversation on it and just like the various, you know, inequities? Because right now I will say it, having worked in the field for a while, it seems like now is a, you know, equity strategist. I have less resistance to move forward right now, but hopefully it will continue like that. But just by, you know, things go in cycles. I'm not sure about what can we do to really keep this in the forefront?

Fernando De Maio

I'll speak to that again. Yeah, sure, sure. So how to keep this momentum moving forward? I think the piece that I mentioned on our analysis of the use of the word racism is quite profound and important on this level that we need to build acceptance for the word as something that we can measure. [Missing words] never been published in the Journal of the American Medical Association. Profoundly important social epidemiologist

has revolutionized our understanding of health inequities, and she has never been published, perhaps by self choice or perhaps by editorial position. She has never been published and in our Journal of the American Medical Association. So how do we build space for that kind of work? Right. That recognizes the legacy, the history, the process of embodiment, which brings into the fold, right, deeply complex models of genetic variation of epigenetic variation in populations, but also the deep structural and political systems that harm populations. I think it behooves all of us in our research and publishing dissemination worlds to make space for that kind of work and recognize that it would be a loss if we continue to push that aside and into other venues.

Vabren Watts

All right, and I'll ask this question to Mildred. So, you know, one of the particular challenges and with research, you mentioned some during a talk. Are there any other particular challenges that involves genetics and references to specific groups of people that you maybe did not expound on in your talk?

Mildred Cho

Yeah, I think, you know, this is the idea that race is not a biological construct is very hard for biological researchers and clinical researchers to wrap their heads around because that's what we've been taught. We've been taught the opposite our whole lives. So I think that's a major challenge. On the other hand, I think that these discussions around racism, socioeconomics, politics and other factors that clearly have health and biological effects, I am hoping, that this will open the conversation up to encourage researchers to think more broadly about, you know, going beyond sort of their narrow focus of, you know, genes and biochemistry and things like that, and think about more broadly about sort of health and disease in that way. And also, I hope that people will look and take away from these conversations, a kind of questioning of the assumptions that we've been taught. The government-mandated racial categories and ethnic categories that we use, you know, really make no sense from a scientific perspective. What does what does Asian mean, right? Like what does Hispanic mean? It seems obvious to me that these are not

these are not meaningful and useful scientific categories. When you know, Asian is potentially representing a billion people with huge variation and also in a world where we have huge migration across the world. Immigration and the idea that there are pure categories of anything is just not tenable anymore. So I'm just hoping that these kinds of conversations will encourage scientists to really be more critical of their own work.

Vabren Watts

Yes, yes, yes. It's interesting that you say that, as you say that we do have migration across the world and depending on where you land, you may be a different race. So it is definitely, you know, your race changes for country, that just goes to show that how big of a social construct race is. So I do have you see you have any questions from the audience right now? Please drop your questions and see the Q&A. We're eager to hear what you have to say and what you want to ask us. But I'm moving along. What are what do you think this is for either Dr. Cho or Dr. De Maio? What do you think are some particular challenges? I'm sorry, what are some red flags that journalists should watch for when reading a study that involves race or ethnicity?

Mildred Cho

Well, I think. You know, some of the things we've already mentioned are red flags in terms of any time you see a study that attributes a cause and talks about race and ethnicity or race or ethnicity as sort of as a cause of disease or a cause of drug response or something that or even a marker of drug response or treatment variability or anything like that, I think that is a red flag because as people in public health know, you know, I think there's too much we're too quick to look at association and think that there's a stronger relationship like a causal relationship there. So just because, you know, people who are in one category are more likely to get a disease than another doesn't necessarily mean that the fact that they are of a different race is behind that, it could be, you know, many other things.

Fernando De Maio

I fully agree. And in many ways, I wonder if journalists are even better equipped than people in medicine and public health to ask these questions of why these patterns come to be, that the causal patterns of play. We could list hundreds of articles that list race, black race in particular as a risk factor for disease, along with tobacco consumption or all kinds of, you know, traditional risk factors that we list race as as a risk factor for whatever outcome, whether it's obesity or diabetes or cancer. And equally, we have lots of studies that that frame the zip code or the census tract or the community, right, as the driving factor. But there's nothing magical about zip codes, right? There's nothing magical about census tracts. They represent the lived experience. They represent systems, political, economic, all kinds of systems that shape lives or that shape our ability to live, to live the life that we value. I think journalists are really good at asking these questions of why do these patterns take shape? How do they take shape, how they played out over history? My favorite book in this area is *Mama Might Be Better Off Dead. The Failure of Health Care in Urban America* written by a journalist, Laurie Abraham, it was not written by a scientific researcher and academic. It was a journalist who followed a family in North Lawndale, one of our worst-off communities, economically speaking, in the shadow of the Illinois Medical District. But as advanced as high-tech, as remarkable medical infrastructure as one can imagine, this family was systematically blocked from accessing it until the very end of their lives. And it was a journalist that told that story in profound ways that get us to understand in ways that maybe statistical models never can.

Vabren Watts

Yeah. And you know, that's one thing I'm going to say this as a former journalist. That is one thing that I did like about being a journalist where as a scientist, there was a like a lot of quantitative data that was going on. However, when I went into journalism, I was able to. It was more qualitative with even more, I guess, power, because you really get to find out the reasons why things go on. And like usually and I will say, you know, in research, you know, sometimes you're sort of limited, you know, to things that you can ask because you're trying to get the research question answered. But yeah, but just as a journalist,

having that opportunity and really privileged to go to do a deeper dive is all of the best, you know for that. And if you're a researcher and a journalist, you get the best, you get the best of both worlds. So we have had some successes, you know, major successes with addressing racism in medical research and publishing. I talked about some and you know, that was really with us, like doing a survey, see who is publishing, you know, within, you know, the journal. And then you two have actually done some, read papers on, you know, just about the word racism as well as what Mildred went into detail about, about just language, you know, that is not defensive. Is there anything else that you wanted to add to that list as it relates to successes of addressing racism in medical research and publishing?

Fernando De Maio

I think the only thing that I would potentially add is the I think the recognition among many people that business as usual would be unethical and produce further harm. So, you know, Health Affairs has led this charge, and it's remarkable to see this now inspire the reflection in other journals. That's a huge success, and it would be hopefully difficult to go back to the way things were.

Vabren Watts

And this is a question for journal editors as Mildred. Are there some submissions that maybe we are rejecting today because of racism? That would have not been accepted a year or two ago? Put this way. Are we more lenient to it? I guess more open to accept terms about racism or the research on the intersection of like racism in health or racism and in genetics now than we were two years ago, because this is an ever-evolving cycle, I just wanted to get your take on that, Mildred.

Mildred Cho

Yeah, I think so. I think that a lot of journals now are really revisiting kind of their criteria for accepting journals in terms of what kinds of research questions they think are important. And I think addressing broader issues of structural racism sort of have have

come up to the top of closer to the top of the list than they were before. I also think that there's more attention in sort of the reviewing process to question sorts of things that weren't questioned before like: why are you only using a single population? It might be populations that are very high income, for example, or populations that have only, you know, highly educated white participants in the study and that used to sort of just go unnoticed. But now that gets flagged as maybe this is not, maybe this isn't answering, you know, the most important research question.

Vabren Watts

Yeah, you know, as interesting as we at Health Affairs will advance equity, you know, when people have bit, you know, sharing different stories with us, particularly as it relates to like our survey and you know how sometimes if you don't identify with a certain group, sometimes things go over your head. But I did have an American Indian researcher reach out to me, and she was talking, you know, via the qualitative analysis. And you know, she's doing great research, but she kept getting pinged on her population size was not big enough. And so, you know, she was like, that is the ongoing thing, particularly with American Indian researchers and it made me think, you know, when I was talking with her, I said, you know, we have built a construct that really catered towards a particular population that we don't even realize how, I guess, unfair and the biases that are associated with it. And that was really, I have had many eye-opening points within this job, but that was really one that really, you know, stuck out to me. And then just the fact that one of the things that we at Health Affairs have been noticing, we do have an issue coming out on racism and health. And one of the things that we say, if we have racism in health, less is not going to be about comparison of white, black and Hispanic because you see that like a lot. And so we're making sure that this racism in health, we include all, you know, you know, racial groups, particularly those racial groups that are marginalized. That includes, you know, American Indian, the ethnicity of Hispanic the Asian American and Pacific Islander population, and, you know, so it's just very important that we when we address racial equity, that we're inclusive even among those groups that are that

have been marginalized. And I would like to add, I mean, they've still we're still waiting on some questions coming in.

Mildred Cho

I see a few in the Q&A that I wonder if I might address one of these, that it was about just disaggregating data since I mentioned that. And I just want to be clear that I think when people are sort of confronted with the idea of examining how they use race and ethnicity, people are afraid that that means that they shouldn't use race or ethnicity in their research. And that's I just want to be clear that that's not what I'm saying at all. That's not what I'm saying. And I'm not saying that disaggregation is the right way to go in anything. But I think I want to convey in this sense that I think that the way we use race and ethnicity categories has been very much like, well, we'll just use the OMB categories because that's what the government says we're supposed to use or we'll just use what's in the electronic health record because that's what we have, right? But it really depends on what kind of research questions you're trying to ask as a researcher, right? If you're trying to address racism and you're trying to understand racism, then using social categories, using self-reported categories, using reports of how people perceive others race is completely appropriate or ethnicity. Right. But if you're trying to use it as a biological variable, that's where you get into trouble. And so I think you just have to be clear that the variables you use match the research question and the methods that you're using and that whatever variables you use that you make some attempt to validate your measure. Like, how accurate is this? How consistent is this? How reproducible is this? Just like you would with any other variable, you need to calibrate it. You wouldn't, you know, use blood pressure readings if there's a huge variability in your blood pressure readings from day to day. So just treat it like any scientific variable.

Fernando De Maio

These are really excellent points if I can add two things that your comments kind of sparked to me. It also really said you always looked at the history of the categories that we use, right, to recognize that they have changed over time, that they vary across place. Vabe, you mentioned this before I checked a different box, depending on what country. I

mean, I was born in Argentina. We don't have a Latino box in Argentina. I studied in the UK. The racial categories there looked very, very different than any form that I filled out in Canada or here in Chicago. So just knowing the geopolitical history of the categories that you're using could go a long, long way towards overcoming the thinking that they reflect natural biological differences between groups.

Vabren Watts

And so with that being said, I guess one of the things that as a journalist, you really have to be careful on where the research is coming from. You know, for those I guess you said your different races in four countries were very different where you might identify as a different race. And for now, now I know you saw a question, I did not see any questions that anyone. Do you guys see any more questions?

Mildred Cho

So in the Q&A, I can just throw some of them out there. The first one is about how can medical journalist reframe or better pitch health equity stories when they are faced with pushback from editors or management like this isn't new enough or our readers aren't interested. I'm actually interested in what you guys think about that as journalists because. Yeah, I think that there might be.

Vabren Watts

Yeah, you know, actually, do you mind if I take that, Fernando?

Fernando De Maio

Yeah, yeah, that's right.

Vabren Watts

Yeah. You know what? So is interesting there, and I think I've mentioned this to you, Mildred, before in the previous conversation that we had. In some places, diversity of your background for this, which whatever we do in life, our background always creeps in

some type of fashion, like some type of way, fashion or form, even if we don't want it to actually creep into the scenario. But I discussed with you as a story where I had to pitch an article to one of my editors as a journalist. And the only reason like, I don't like what made the article, sentiments were first white. What was the big idea with this? And so it was an article dealing with a sickle cell trait. I went to this conference for sports directors and they were talking about, they were recommending, do not let your children with sickle cell trait actually play in, you know, Division One football specifically with that. And so, you know, when I first went there, I wasn't grasping what they were saying. And the reason why I was not was not grasping what they were saying was because I was hearing fulminant sickle cell disease and not sickle cell trait. And it was selected hearing because sickle cell trait as an African American, and it's been told us that the sickle cell trait doesn't cause, you know, that much risk to your life. They just told us, you know, as children and things like that, my parents actually told me things like this, as well as this is pervasive in the community that, you know, if you do have a sickle cell trait, just make sure that you're careful. If you do, you know, marry someone or partner with someone who has the sickle cell trait because you could have a child who has sickle cell disease. But they told us that that was the only thing we have to worry about with the sickle cell trait. So when I went to that, to that conference and heard that sickle cell trait was dangerous, it automatically put up my antennas to say like, oh, this myth that has been going on in the black community, well, this notion has been one that has been going on in the black community is a myth that the sickle cell trait is not as dangerous. Because for that year for a decade from 2000 to 2010, the sickle cell trait was the number one killer of Division One athletes. And it really didn't get any traction and be in the news outlets. So I had to explain that what I'm explaining to you to you, why that was important to publish that. And actually, after I explained that it was a little, you know, hesitant. But when we published it, I mean, it took off. It really took off. Like, we got, you know, responses that, you know, people, you know, upwards, particularly a lot of black people say they had no clue, you know, that you know, it could pose, you know, so much of a threat, actually. Then someone from NCAA called because at that time they were considering to really require sickle cell trait testing for all the Division one athletes.

Moving at I guess, 10, 12 years later, it is now required for all, even if you're not Division One. And it actually was used in a hearing, you know, to actually to implement testing, you know, among NCAA. So if that, you know, conference that I went to on a whim not really expecting to get anything and end up being one of the stories that still come up today that I hear today. So just really, you know, pitching your article in and just explaining why you know, it is important is something that that you know, that that we as a journalists, as I say, once a journalist always a journalist, can do is just really give the rationale for that. And Fernando, did you see any questions? Or Mildred did you see more questions?

Mildred Cho

There was one about JAMA saying that JAMA has made recent pledges and actions to reckon with past racism. But some of their actions have been criticized heavily, such as the podcast, the infamous podcast. And so the question is what lessons have you learned from these debacles? How do we know what's the right way to take an anti-racist stance?

Fernando De Maio

Yeah, first, thanks for that question, and I'll answer it with full transparency as best as I can from my stance. So first note that there is fierce editorial independence between JAMA and the American Medical Association. So the team that I sit on at the Center for Health Equity under Dr. Lisa Maybank, it's completely different enterprises. I know that and we recognize that the public at large doesn't see that division, and that's OK. But it's something that I always do try to explain when I can. That JAMA isn't our shop per se. I think what we've seen, though, with JAMA, what we've seen with the pushback against our racial justice and Health Equity Plan, which we released earlier this year. The pushback that we've seen in some quarters around our narrative, language and concepts guide with the AAMC Center for Health Justice is that this work is not easy, that it will entail a lot of difficult conversations. And it will take a lot of pushback. A lot of criticism, sometimes from progressive actors, sometimes from reactionary status quo defenders.

And that, I think, has to be accepted that there's not going to be an easy, linear process for really achieving racial justice and health equity as a country. This is built into the DNA of this country, right? That it's not the default setting, justice and equity. So any movement towards that, it's going to be difficult. So I don't know if they're debacles. There have been missteps, of course, that infamous tweet and those things that they should not have gone out. They should never have gone out, but they have to be an opportunity to learn, to challenge ourselves, to do better and to hold ourselves accountable for what those things do go wrong for how the damage could be repaired. So it's not an easy thing, and it's not something that we're going to solve overnight. We're talking about really big questions, right, about addressing racism in medical research and publishing. I can't imagine more difficult conversations and more difficult projects to take on in the United States than the conversations we're having right now. So while I don't have any easy answers, I do convey the authenticity, the humility that our team is bringing to this work and that we think we're moving towards the right direction.

Vabren Watts

And we have a question from Anthony Johnson, I can see the questions now. It is said definitions are always critical. Is there a clear or concise definition of the word racism that could be broadly utilized by medical research stakeholders? If not, this represents a potential opportunity for today's participants.

Fernando De Maio

So I can quickly chime in on that. That's been a defining feature of our much of our work at the Center for Health Health Equity through the Strategic Plan for Racial Justice and Health Equity and this narrative guide that I mentioned before, we find great value in the work of Dr. Camara Jones, as I know many of you do as well. And she lays out a beautiful, concise, I think, very, very practical definition of racism as a system of structuring opportunity and assigning value based on the social interpretation of how one looks. The thing that we call race. It unfairly disadvantages some individuals and communities, unfairly advantages others, and it saps the strength of the whole society

through the waste of human resources. And then she walks through how to operate in four different levels. Structural, institutional, interpersonal and internalized. For us that framework, right? This idea that it's a system, it's not necessarily an individual behavior, but we're talking about a system that's based on race, the social construction of race. Very importantly, it disadvantages some and advantages others. That's hugely important and not often recognized, and it saps the strength of the whole society, we all lose. And that's where the beauty of Heather McGhee, the *Sum of Us* that many, many people are talking about as well hints at these issues that we all lose from this, from the racism that's embedded in our society, and it operates at these different levels. That's what I would offer.

Vabren Watts

And for Mildred, I don't know if you want to respond to that question. All right. And for our final question that we have, we have that how can journalists be accountable for the choices they make in the editorial boards, reviewer pool and manuscript triaging; who besides perhaps the readers can police journals? Do you mind if I start with that question on the panel, actually? Yeah, so, you know, that's t a great question. Yeah, who can police these journals? So the thing is, is that I will say now I was just speaking on behalf of Health Affairs. One of the things that I asked Health Affairs before I did this job. I said, you know, if we're going to do health equity strategy and equity strategy, racial equity strategy or equity strategy of anything is very important that we be transparent. So, you know, I don't know if you guys have been following all the fast, but for those who do at the beginning of the year, January 2021, you know, I said it was lay out these things and that was a way of holding us accountable because if you put things on, you know, online for the public to see, you will be held public, a publicly accountable to actually do those things. So it was more so more, I took the approach of like the public policing Health Affairs. People will remind you where you fall short, people will applaud you when you do well. But that's one of the ways that we do it in Health Affairs. Whenever we see accountability is just to have that public accountability.

Mildred Cho

I would agree with that. I think what advantage the publications have is that they're public facing, you know, they publish things so we can put it all out there and have people throw it back at you when you don't get it right. But I think one thing I think a lot of these anti-racist efforts have done is to, you know, incent journals and publications to first, take the first step in being accountable to themselves by collecting data, as you mentioned, Vabe, right, like most journals didn't even know what kind of diversity they had or didn't have, and you have to collect data on it to understand that. So that's the first step and then making that data public so that, you know, it's like, you know, sort of the is the next step and then acting on it. So, you know, publishing all these things will hold journals accountable for all those things. And then in terms of sort of having an external policing function, I think there are, you know, one of the things that Genetics in Medicine probably other journals are doing is going back and looking historically over things that were published in the past, searching for things that may have been offensive, searching for examples of articles that probably shouldn't have been published in the first place. And then actually highlighting those, pointing to them and saying, look, this was wrong, shouldn't have done this, we're not going to do this in the future, and this is why. And again, being transparent about all that and making clear your statements about the rationale for it.

Fernando De Maio

This is such a profoundly important process, right? Of reflection on each journal's history. And it also opens the question that we don't really [missing words]. We see remarkable changes with open access, journal sourcing, remarkable changes with preprint servers. You know, we kind of take it as a default that this is the way things are done and how results of findings are shared. But I'm not so sure that in 20 years time, our publishing infrastructure will be the same as it is now. And so I hope that it could actually be more transparent as we move forward.

Mildred Cho

I was just going to say that I think the, you know, the increasing practice of open publishing with, you know, open peer review will let the policing sort of be crowdsourced, right, so anybody can say, look, I'm going to review this manuscript and I see all kinds of problems with it, and I'm going to put it all out there and I'm going to attach my name to it. So now I'm accountable for that, too. So the accountability gets spread all around.

Vabren Watts

Oh, this this talk was amazing, and even though I was moderating, I was also taking notes here on the side. You know, I really appreciate the Hastings Center for really allowing us to come to this session and share our perspectives and everything with all the guests who are here today. And I think we have Aashna who's coming up next. But but I would just like to say I was, really on behalf of the panel, because I know we have two minutes left, on behalf of the panel for Dr. Cho, for Dr. de Maio. Thank you. And we really appreciated this conversation that we had today.

Aashna Lal

All right. Thank you so much again, everyone for attending a recording of this discussion will be available shortly on the Hastings Center's website, www.thehastingscenter.org and on Elsihub.org, along with resources and recordings of the previous three events in the series. We also would like your feedback on today's event. You will receive a brief survey via email shortly after the event. Please return it as soon as possible. We'll use your feedback to improve future events. Thank you again and have a great rest of your day.