In the Supreme Court of the United States

ASHLEY MOODY, ATTORNEY GENERAL OF FLORIDA, ET AL., PETITIONERS

v

NETCHOICE, LLC, DBA NETCHOICE, ET AL., RESPONDENTS

NETCHOICE, LLC, DBA NETCHOICE, ET AL., PETITIONERS

v.

KEN PAXTON, ATTORNEY GENERAL OF TEXAS, RESPONDENT

ON WRITS OF CERTIORARI TO THE UNITED STATES COURTS OF APPEALS FOR THE FIFTH AND ELEVENTH CIRCUITS

AMICUS CURIAE BRIEF OF DONALD W. LANDRY IN SUPPORT OF THE ATTORNEYS GENERAL

Joel B. Ard P.O. Box 11633

Ard Law Group PLLC Bainbridge Island, WA 98110

 $Counsel\ of\ Record \tag{206}\ 701\text{-}9243$

Joel@Ard.Law

Counsel for Amicus Curiae

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INTERESTS OF AMICUS¹

Amicus Curiae Donald W. Landry is the Hamilton Southworth Professor of Medicine, Chair Emeritus of the Department of Medicine, and Director of the Center for Human Longevity at the Department of Medicine of Columbia University College of Physicians and Surgeons. He also is former Physician-in-Chief at NewYork-Presbyterian/Columbia University Irving Medical Center.

Dr. Landry is a physician board-certified in Internal Medicine and Nephrology and a Ph.D. organic chemist who founded the Division of Experimental Therapeutics at Columbia University, known for his contributions to cardiovascular biology, artificial enzymes, and drug discovery. Landry's scientific and medical innovations have been recognized through various awards, including the Presidential Citizens Medal, the nation's second-highest civilian award, in 2008, his induction as an elected fellow of the National Academy of Inventors in 2015, and his induction into the New Jersey Inventors Hall of Fame in 2016.

Landry is credited for a method to create human embryonic stem cells that spares the destruction of healthy human embryos by isolating live cells from dead embryos that have died from natural causes. He is also known for discovering the syndrome of vasopressin deficiency in vasodilatory shock, leading to the current clinical use of vasopressin to treat septic shock, post-cardiopulmonary bypass-related

¹ Under Rule 37.6, no counsel for a party authored this brief in whole or in part, and no person other than amicus curiae, its members, or its counsel made a monetary contribution to its preparation or submission.

vasodilatory shock, and other vasodilatory shock states. Additionally, he has contributed a variety of other advancements to biomedical science, including anti-cocaine catalytic antibodies and another class of artificial enzymes in clinical trials for cocaine overdose.²

Dr. Landry writes this brief not with any precommitment or predisposition for or against any medical treatments discussed in this brief but rather in defense of the freedom of scientific inquiry and debate. He began his distinguished career confident in this freedom and the resulting progress of medical science, but he now fears that it is profoundly endangered. He therefore writes this brief, hoping to convey that it is not merely political opinion at risk. At stake is nothing less than modern empirical science and all its blessings.

Amicus is directly interested in this case's outcome because of his devotion to teaching doctors and caring for patients. Any limitation on the freedom of scientific debate tends to diminish scientific knowledge and the integrity of science. He and his patients and his students and trainees thus cannot afford any impediments to open scientific discussion.

The above-stated interests and issues are relevant to this court's resolution of this appeal. Therefore, *Amicus* respectfully submits this *amicus curiae* brief to aid this court in its review.

 $^{^2}$ See "Donald Landry," Wikipedia, at <code>https://en.wikipedia.org/wiki/Donald_Landry.</code>

SUMMARY OF ARGUMENT

Judges often think about freedom of expression in terms of political opinion. And so this Court may be under the mistaken impression that this case centrally concerns differences of political viewpoint.

But equally central here is scientific opinion. Science depends on the freedom to question any existing scientific theories, even widely accepted ones. So the censorship of outlying scientific ideas is a profound danger for science and, ultimately, our society. Accordingly, there is a compelling state interest in protecting against this peril.

ARGUMENT

I. Galileo

The danger of suppressing dissenting scientific opinion is familiar from the fate of Galileo Galilei. He held to the hypothesis that the earth and the other planets revolved around the sun, and in pressing this theory of a heliocentric solar system, he provoked a charge of heresy. The Roman Inquisition brought him to trial in 1633 and concluded by sentencing him for his misinformation.

It declared his view, that "the sun is the center," to be "absurd and false" and "heretical." It then ordered his book to be "prohibited by public edict" and imprisoned him. 4 Yet that was not the worst of it.

³ Maurice A. Finocchiaro, *The Galileo Affair: A Documentary History* 288 (1989).

⁴ Id. at 291.

As the great English poet John Milton later recounted, he "visited the famous Galileo grown old, a prisoner to the Inquisition." Although he felt for the scientist, Milton recognized that there was an even greater loss, for the Inquisition's censorship had stultified scientific inquiry across Italy, leaving it in a "servil[e] condition."

This is the danger for the United States. Suppression begets timidity and subservience to power. It does not merely silence what is censored; it also more broadly dampens down the vigorous debate that, over time, corrects errors and favors truth. The freedom of debate is the very heart of scientific inquiry and progress. The preservation of this freedom is thus a compelling government interest.

II. The Necessity of Freedom to Dissent

Science depends on the freedom to share dissenting theories and contradicting evidence. Without this freedom, science and all the progress that depends on it are apt to be stultified.

It has become commonplace to talk about science as if it were a known body of facts that, having been verified by experts, is beyond dispute. On this basis, it is said that one should follow "the science"—as if the truth were always transparently clear.⁷ And it is

⁵ John Milton, Aeropagitica: A Speech of Mr. John Milton for the Liberty of Unlicensed Printing 24 (1644).

⁶ Id. at 39.

⁷ David Leonhardt, Follow the Science? If Only It Were so Easy, NYT (Feb. 11, 2022), at

assumed that it is wholesome and valuable to sweep "misinformation" off the web. But science is an exploration, not a fixed—let alone known—body of information.

The old science propounded certitudes. Aristotle studied worldly phenomena, but rather than seek testable generalizations about human beings and their material circumstances, he proposed a natural hierarchy of creatures in a metaphysical hierarchy. His thought was therefore long popular among theologians, who relied upon it to expound otherworldly truths about this world and its maker.

This old science, however, was disrupted by the Scientific Revolution, which has reshaped human life over the past five hundred years. Copernicus and, increasingly, others, including Galileo, worried that their observations of the planets could not, in an uncontrived fashion. be reconciled with Aristotelian and Ptolemaic vision of an earth-centered universe. Based on growing empirical observations, the new astronomers eventually persuaded their contemporaries that the planets, including Earth, revolve around the sun. By dislocating the heavens, these astronomers encouraged others to focus on Earth and its inhabitants.

In this spirit, the great philosopher Francis Bacon propounded that empirical study—testing generalizations for error against worldly

https://www.nytimes.com/2022/02/11/briefing/covid-cdc-follow-the-science.html ("Many people have come to believe that expert opinion is a unitary, omniscient force. That's the assumption behind the phrases "follow the science" and "what the science says.").

observations—would create a new age of scientific knowledge. No longer speculating about the next world, scientists would examine the objects and human beings in this world, and by testing generalizations about material things, they would transform human life, enabling human beings to master nature and, ever more profoundly, increase healthy longevity, utilize the blessings of liberty, and pursue happiness.

The value of Bacon's life-altering vision of experimental science is apparent in the circumstances of his death. While traveling by coach through the snow in 1626, he was seized with a theory of refrigeration. He demanded that the coach be stopped to "try the experiment." He got out, bought a chicken, and packed it with snow to see if the snow could preserve it. His invention of refrigeration as a new and useful advance in food preservation continues to benefit humankind. Alas, coincident with this eureka moment followed by experimentation in the snow, he developed pneumonia and succumbed a few days later.

Nowhere has the Baconian vision been more transformative than in the United States. In the Old World, under the old science, life was "poor, nasty, brutish, and short." In the New World, with the new science, life has been open, more comfortable, and full of expectation. Luxuries and lifesaving "miracles," once available only for a tiny elite, are now surpassed

⁸ Andrew Clark, John Aubrey Brief Lives, Chiefly of Contemporaries, Between the Years 1669 & 1696 75 (1898 Clarendon Press).

⁹ Thomas Hobbes, Leviathan, or the Matter, Forme & Power of a Common Wealth, Ecclesiastical & Civil 62 (1651).

by conveniences and common interventions, ranging from phones to vaccines, for the multitude.

But this new science depends on something suddenly in short supply—the freedom to question established verities. Without that freedom, science, and all its blessings, whether in medicine, public policy, or personal relations, will sink into conventional thought and stultifying demands for conformity.

The process is one of questioning received theories. "The scientific process, an iterative process, uses the repeated acquisition and testing of data through experimental procedures to disprove hypotheses. A hypothesis is a proposed explanation of natural phenomena. After a hypothesis has survived many rounds of testing, it may be accepted as a theory and used to explain the phenomena in question." What is said to be scientific knowledge is thus just an accepted theory, and even the most accepted theory remains open to question—as evident from the progression in of Galileo, work Newton, and Einstein. Questioning may abate when a theory is widely accepted, but it can never stop because often longaccepted theories fall apart in the face of new evidence. As a result, only when a theory is open to questioning and testing can one have confidence in it.

 $^{^{10}}$ The Scientific Method, Chemistry, LibreTexts, at https://chem.libretexts.org/Bookshelves/Analytical_Chemistry/S upplemental_Modules_(Analytical_Chemistry)/Quantifying_Nature/The_Scientific_Method#:~:text=The%20Scientific%20Method%20is%20simply,of%20patterns%20in%20our%20world.&text=The%20scientific%20process%2C%20an%20iterative,experiment al%20procedures%20to%20disprove%20hypotheses.

In fact, Karl Popper proposed that a scientific hypothesis is specifically one that is *falsifiable*—one that, in theory, could be shown to be false. Thus, "[a] theory which is not refutable by any conceivable event is non-scientific."¹¹

Put another way, scientific knowledge consists fundamentally of falsifiable theories—theories that can be shown to be erroneous. Myriad positive results can merely support; a single negative result can refute. So, all that can be known with much certainty is that a theory is mistaken, not that it is absolutely true. Of course, accepted theories are taken as true. But even they are open to question when contrary evidence appears to show that they are in error. The advance of science is thus to be found in proof of error followed by new hypotheses—exploring what is unknown rather than asserting known truths.

All of this has profound implications for freedom of expression. At the very least, it means that scientific hypotheses must be published, for only then can they be questioned and tested. But that's not all.

The crucial point is that all theories, however widely accepted, must be open to being challenged by the publication of alternative theories and evidence. Those dissentient theories and the supporting evidence may be profoundly disconcerting. Witness the nineteenth and even twentieth-century controversies over Darwinism. But there can be no scientific progress without the publication of dissenting views.

¹¹ Karl Popper, Conjectures and Refutations the Growth of Scientific Knowledge 35 (1963).

Although the progress of science once depended merely on freedom of publication in scientific journals, science is no longer confined within the walls of academia. Knowledge was once found mostly in monasteries, but it was a cloistered sort of learning, and with Gutenberg's invention of a practicable moveable type, the general public increasingly participated in the exchange of ideas. Similarly, today, the Internet has democratized knowledge, including scientific inquiry. Scientists, doctors, patients, and smart but uncredentialed members of the public from across the world now share clinical observations, critique scientific papers, participate in online scientific fora, and otherwise participate in testing the theories that are held up as unassailable truths.

In other words, with democratized communication, the debates about science spill out into public debate. This is most common where science is the foundation of government policy, often prompting wide-ranging public discussion about the scientific merits of the policy.

In such instances, if government policy rests on "the science," one may assume that it is important to discourage anti-scientific views, lest they undermine the effectiveness of important policy. But where policy is based on science, it becomes even more important to preserve the freedom to question "the science." Rather than "the science," we only have conflicting scientific theories, all of which must remain vulnerable to doubts, contrary observations, and proof of error. And where government policy rests on any scientific theory, however well accepted, we all will suffer if there are impediments to challenging the policy and the underlying scientific theories.

The very ideas of scientifically based government policy become ludicrous when governmental or otherwise prevailing policies are protected from dissent. At that point, the policy is no longer based on science, but its antithesis.

The dissenting views may be wrong. They may even be offensively wrong. But science depends on the freedom to publish observations and ideas that may be in error, for only in this way can prevailing and governmental theories be tested. A social media platform, in its wisdom, may believe that a viewpoint is so clearly wrong that there is no harm, and even much benefit, in censoring it. But if the censored perspective aptly challenges a prevailing theory, the censorship may prop up a false theory, with profound consequences for all who mistakenly rely on it.

So it is no small matter when social media platforms suppress dissenting scientific views. They thereby reinforce the status quo in scientific knowledge and deprive all of us of the opportunity to consider and reconsider alternative theories. Such suppression and conformity in science is frightening. As Milton already noted, it deadens scientific advances, and it is lethal for all of us who depend on such progress.

III. Tech Suppression of Scientific Dissent

The danger of censoring scientific dissent is painfully apparent from the conduct of social media platforms during the COVID-19 crisis. They reinforced prevailing opinion and allied government policy by suppressing dissent on a host of scientific questions. As a result, many Americans were deprived of knowledge that might have helped them, and

government policy remained rigid where flexibility would have been desirable.

At the beginning of the crisis, there was reason to wonder whether the virus had originated in a lab. It was critical to understand this because if it were true, information from the lab might have sped up the development of vaccines and therapeutics. Nonetheless, as later reported by the Washington Post, "[f]or four months, Facebook censored claims that the coronavirus originated in a lab in Wuhan, China," and only later "reversed its stance"—and so this became "a prime example of how the pandemic has intensified the free speech questions already plaguing social media titans."12 Commenting on this, Professor Jonathan Turley noted in June 2021 that "[slince February, Facebook has been banning posts claiming the virus was man-made or manufactured. . . . It was ridiculed at the time as entirely divorced from actual science," and yet Facebook then announced that "[i]n light of ongoing investigations into the origin of COVID-19 and in consultation with public health experts, we will no longer remove the claim that

¹² Alexandra Ellerbeck, *The Health 202: The Pandemic Intensified the Tech Censorship Debate*, Washington Post (June 7, 2021) https://www.washingtonpost.com/politics/2021/06/07/health-202-pandemic-intensified-tech-censorship-debate/.

COVID-19 is man-made."¹³ Oops. The censors may have got it wrong.¹⁴ And at what cost in human life?

Next in line for censorship were arguments for the anti-malaria drug hydroxychloroquine. Facebook suspended accounts for "touting the benefits of the anti-malaria drug in some COVID-19 patients," but accentuating the danger of the censorship is its tendency to arouse irrational interest in the censored drugs. As put by physician and medical podcaster Roger Seheult—who was "censored by YouTube for discussing the clinical trials of hydroxychloroquine and Ivermectin as potential Covid-19 treatments"— "No wonder so many people still believe these are the cures 'they' don't want you to know about. Much better would be an open discussion of the clinical trial process, which could help people understand why scientists think those drugs are unlikely to help." 15

¹³ Jonathan Turley, Facebook: People Will Now Be Allowed To Discuss Whether Covid-19 Originated In Wuhan Lab, Res ipsa loquitur - The Thing Speaks for Itself (May 27, 2021), https://jonathanturley.org/2021/05/27/facebook-people-will-now-be-allowed-to-discuss-whether-covid-19-originated-in-wuhan-lab/.

¹⁴ Faye D. Flam, Facebook, YouTube Erred in Censoring Covid-19 'Misinformation': The Lab Leak Theory is Just the Latest Example of a Covid-19 Idea That Was Prematurely Debunked, Bloomberg Opinion (June 7, 2021),

https://www.bloomberg.com/opinion/articles/2021-06-

^{07/}facebook-youtube-erred-in-censoring-covid-19-misinformation ("Labelling misinformation online is doing more harm than good. the possibility that covid-19 came from a lab accident is just the latest example. social media companies tried to suppress any discussion of it for months.").

 $^{^{15}}$ *Id*.

Similarly, the social media platforms have censored debate about the vaccines. In September 2021, YouTube announced: "content that falsely alleges that approved vaccines are dangerous and cause chronic health effects, claims that vaccines do not reduce transmission or contraction of disease, or misinformation on the substances contained in vaccines will be removed."16 That may sound admirable, but who can have such confidence about what is false and what is not? As it happens, there are now reports that the vaccines can have serious side effects, including death, and that they often merely reduce the severity of the disease rather than prevent transmission or contraction of the disease. 17 Over 99% of physicians were vaccinated for COVID-19 in short order, including Amicus, which underscores the relative safety of the vaccine in the minds of those in the know. But whatever the truth, it will not be known without freedom of debate.

Masks also were the subject of censorship. Nonetheless, recommendations on masking, especially with cloth masks, have gone back and forth—as if to show that "the science" is an illusion. Rather than censorship, what is needed is free discussion of relevant information. For example, "in Sweden, where there was no mask mandate for children, pediatric

¹⁶ The YouTube Team, *Managing Harmful Vaccine Content on YouTube* (Sept. 29, 2021), at https://blog.youtube/news-and-events/managing-harmful-vaccine-content-youtube/.

¹⁷ James Stansbury, *The Covid Narrative is Falling Apart*, American Thinker (Feb. 2, 2022). https://www.americanthinker.com/articles/2022/02/the_covid_narrative_is_falling_apart.html.

death rates were the same before and during the pandemic." ¹⁸ A recent commentary observes:

If we have learned anything from the pandemic, it should be intellectual humility. What we accept as true may be false; what we accept as false may be true; institutions and experts can be wrong. Just consider the changing guidance from experts on masks. At the start of the pandemic, experts were saying that masks did little to stop the spread of COVID and were unnecessary. Then thev changed their guidance. advocating for masks, including cloth ones. Now, they are saying that cloth masks are almost useless. Twitter's policy is not equipped to handle content that contradicts these many iterations of expert opinion.

Our point is not to dismiss experts or institutions but to acknowledge that the scientific consensus is ever-changing and that pinning down "the truth" is not easy. The belief in free speech and open discourse is, at root, an expression of intellectual modesty. It takes an incredible amount of hubris to believe that one has an incontestable grasp on the truth. ¹⁹

Whatever the truth about COVID-19's origins, about hydroxychloroquine, about the vaccines, and

¹⁸ Flam, *supra* note 14.

¹⁹ Sahil Handa & Seth Moskowitz, Twitter's Flawed Justification for Censorship, Persuasion (Feb. 18, 2022), https://www.persuasion.community/p/twitters-flawed-justification-for?utm_source=url.

about masks, these are questions of science. The suppression of debate about such things is lethal for science and for patients.

It is said that the truth will make you free. But in science, only free debate can lead you to the truth.

CONCLUSION

Our government, our society, and our very lives depend upon science. But science is not a fixed, determinate thing. Rather, it is an ever-expanding exploration, a profound inquiry into the unknown, which depends on the freedom to challenge and dissent. At the cutting edge of science, there are more questions than answers. And even when theories become widely accepted, they must remain open to being overthrown by new evidence. All scientific progress depends on the freedom to show error in accepted theories. When that freedom to dissent is eroded, there are diminished prospects of progress.

All in all, it is difficult to think of a more compelling governmental interest than protecting open debate. The decision of the Fifth Circuit should therefore be upheld.

Respectfully submitted,

Joel B. Ard

Counsel of Record

Ard Law Group PLLC

PO Box 11633

Bainbridge Island, WA 98110
(206) 701-9243

Joel@Ard.law

Counsel for Amicus Curiae