The events of the past four years, and particularly the past four months, have demonstrated that our country harbors unpleasant tendencies that we dare not ignore, yet still see only “through a glass darkly.” For the scientific community, the most relevant is the existing undercurrent of distrust and even rejection of science that was exposed and acted upon by the Trump administration, with short and long-term consequences.

In the short term there has been substantial damage to health. A report in *Lancet* attributed 22,000 deaths in 2019 to weakening or rollback of environmental regulations, particularly the limits on emissions of particulate matter in the Clean Air Act.1

In the longer term, even those dire statistics seem trivial compared with the effect of environmental deregulation on the already evident climatic disruptions that could trigger mass migrations and threaten civilization as we know it.2

But it would be a mistake to think of the last four years as an aberration without precedent. Even before the Civil War, America had an aptly named Know Nothing Party, whose willful ignorance, nativism, xenophobia, and religious prejudice would seem familiar today, though the perceived peril then came from Catholics, not the rare Muslims or Jews.

Closer to our time, the 1925 trial of John Scopes for teaching evolution in Tennessee, and just two years ago, the measles epidemic caused by unfounded fears of childhood vaccinations, are two of countless examples of science-phobia.

The origin of these views may lie in part in America’s founding mythology, which is filled with tales of hardy, self-reliant, wilderness-taming, often illiterate pioneers living simply, and seemingly without government help or interference. Richard Hofstadter’s 1964 Pulitzer Prize winning book, *Anti-intellectualism in American Life*, 3 traces the enduring grip of that viewpoint, which he characterized as “resentment of the life of the mind, and those who are considered to represent it...” In that view “The plain sense of the common man [is]...an altogether adequate substitute for, if not actually much superior to, formal knowledge and expertise.”

Those views are perhaps more prevalent now than when he described them. It is unlikely that intellectual senators like Adlai Stevenson of Illinois (“The hardest thing about any political campaign is how to win without proving you are unworthy of winning”), and former Harvard professor and then N.Y. Sen. Daniel Patrick Moynihan (“Everyone is entitled to their own opinion but not to their own facts”), could have successful political careers today, when presidential counselor Kellyanne Conway could unashamedly rely on “alternate facts,” and President Trump could call Dr. Anthony Fauci and other scientists “idiots,” without political consequence.

The greatest casualty of the last four years has been Truth, because the availability of unlimited and unfiltered “information” on the internet and via social media often overrides Truth with nonsensical conspiracy theories, and it becomes difficult to distinguish fact from fiction.

Even more troubling is the fact that even advanced education, particularly in medicine with its focus on critical thinking, may not provide immunity against irrational misinformation, such as the myth of the stolen election.

After my last editorial appeared,4 the Journal received a letter from two self-identified “Penn-trained physicians in Berks county” contesting my assertion that claims of voter fraud in the presidential election had proven groundless. Though it was already a month after the election, the letter claimed: “We do believe that truth [voter fraud] will be exposed even to this editor’s echo chamber in the next few weeks.” Apparently in denial about President Biden’s victory margin of more than 7 million votes, they contended that “the majority of Americans...were NOT Biden supporters...” and this majority “have [sic]more common sense and clarity of thought than the automats in Medicine these days.”

Regarding my bemoaning the erosion of trust in science, these physicians asked: “whose ‘SCIENCE’
should the American people trust? Should they trust government bureaucratic scientists who write the protocols and may have financial interest in a treatment or outcome? Should they trust Dr. Fauci who has financial ties to Moderna?... Should they trust the roulette wheel of a rapidly released Covid-19 vaccine that did not go through any Phase 2 animal trials and will be the first ever mRNA vaccine given to humans?”

The misconceptions harbored by these specialty-trained physicians indicate that repeated lies can permeate even the most highly educated segment of society, making it difficult to overcome COVID-19.

Vaccination (and mask-wearing) have become so politicized that science advocacy seems to change few minds and even increases polarization. An example was the April 2017 March for Science at various sites in America and abroad (I participated in D.C.) that was prompted by urgent concern about climate change. The marchers would have been disappointed to learn that surveys three days before and two days after the march found only more polarization: the attitude of liberals toward scientists became more positive, while that of conservatives became more negative.5

Efforts to vaccinate enough people to achieve herd immunity must confront the reality that more than 25% of Americans say they’ll avoid vaccination if possible.6 Resistance comes from many fronts:

- Militant anti-vaxxers are the most intrusive. Those who block access to vaccination sites  are not content with refusing vaccination themselves, they don’t want anyone else to get vaccinated! As believers in conspiracy theories that are constantly reinforced on the internet and social media, they pose an almost intractable problem, since refuting their assertions only proves to them you are part of the conspiracy.
- More tractable are those who simply hesitate because they are confused by contradictory information - about the (rare) risks of vaccination, the wisdom of delaying second doses, protection from variants, etc. Reassurance and education will hopefully resolve their concerns.
- The most seriously affected are communities of color. Not only is COVID killing Black Americans at 3X the rate of White Americans; not only are minority communities suffering disproportionately from vaccine shortages; but Black Americans have reason to be distrustful because they have often been exploited for medical research - most notably the Tuskegee study of untreated syphilis (participants were all told they were being treated), and the use of Henrietta Lack’s cancer [Hela] cells without permission.9

It’s no surprise that nationally, 72% of nursing home workers, mostly people of color, don’t want to be vaccinated despite the added risk in their workplaces.10

The Biden administration promises policies that are not guided by conspiracy theories or prejudice, and it pledges to intensify efforts to educate minority communities about vaccines.

But systemic racism in America persists, and the experience of Americans of color is fundamentally different from that of White Americans. The first three articles in this issue therefore merit your special attention.

REFERENCES

10. https://www.washingtonpost.com/outlook/nursing-home-skip-vaccine/2021/02/12/4d31d17a-6bfa-11eb-9880-3d7646cc1bc0_story.html