

CULTURE WARS
GEN AI
CARBON+
LONELINESS

MUSEUM

TRENDSWATCH NAVIGATING A VOLATILE FUTURE





Strategic Foresight Toolkit

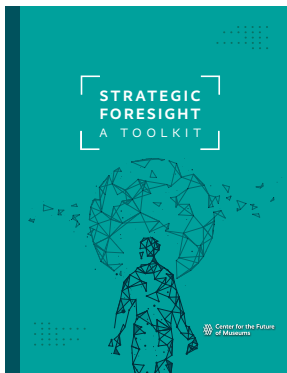
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A 2019 Harley-Davidson FXDRS-114, with an 1868 cc, 8-valve V-twin engine. Also *TrendsWatch* author Elizabeth Merritt.

About the Center for the Future of Museums

The American Alliance of Museums' Center for the Future of Museums (CFM) helps museums explore the cultural, political, and economic challenges facing society and devise strategies to shape a better tomorrow. CFM is a think tank and R&D lab for fostering creativity and helping museums transcend traditional boundaries to serve society in new ways. Find research, reports, blog content, and foresight tools at aam-us.org/cfm.

About the Author

Elizabeth Merritt is the Vice President for Strategic Foresight and Founding Director of the Center for the Future of Museums at the American Alliance of Museums. She studied ecology and evolution as an undergraduate at Yale and received her master's degree in cell and molecular biology from Duke University. Her museum career has included working in a children's museum as well as natural history and history museums. She is a graduate of the Getty Leadership Institute's Museum Management Program and the Foresight Certificate program at the University of Houston. Prior to starting CFM, Elizabeth literally wrote the book on museum standards and best practices as Director of the Alliance's accreditation and excellence programs. She considers this perfect preparation for her current role as agent provocateur—challenging museums to question assumptions about traditional practice and experiment with new ways of doing business.

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In 2018, the exhibition “Carbon Ruins” at Lund University addressed the question “What would a museum of the fossil fuel age look like if we set it in a near future where we successfully transitioned away from fossil fuels?”

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TRENDSWATCH: NAVIGATING A VOLATILE FUTURE

Cover: Our cover image was generated by the artificial intelligence platform Midjourney in response to the prompt “A landscape of modern wind generators and solar panels in the style of Hilma af Klint.”



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The Alliance wishes to thank our corporate partner, who has generously supported this year's *TrendsWatch*:



Affinity Nonprofits

"I always look forward to reading CFM's annual TrendsWatch report as it provides a window into the world of what concerns museums most. The highlighted trends often provide a spotlight on current perils and exposures and thus potential helpful clues about how we need to modify risk management techniques to better serve the museum community." —Joe Dunn, President & CEO, Huntington T. Block Insurance Agency, Inc.

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- Strengthening relationships

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Stay tuned for more resources from AAM to help you measure your museum's social impact!





Connect with museum professionals around the world for the second Future of Museums Summit! With this Summit, we take the theoretical framework from our annual forecasting report, *TrendsWatch*, even further. Join this virtual convening to gain tactical strategies and takeaways to plan for a brighter future for you, your museum, and your community. Stay tuned for additional details and registration!

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Download your free copy today. Visit: bit.ly/2024-board-leadership



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Ahead of Our Time

Welcome to the future, *Museum* readers! This special issue of the magazine is dedicated to the latest edition of our Center for the Future of Museums' annual *TrendsWatch* report, which shares trends emerging on the margins of our field that may become dominant in museum practice over time.

Using the methodology of strategic foresight, the report's author, Elizabeth Merritt, identifies phenomena cropping up in her research, then works with museum experts to anticipate how those trends might impact the field as they develop. Through invaluable context-setting, cutting-edge examples, and incisive recommendations, *TrendsWatch* has for a decade running helped museums stay ahead of changes in society, such as QR codes and the "internet of things" (in the 2013 edition), big data and analytics (2014), and happiness and well-being as metrics of success (2016).

How we imagine the future depends a lot on what's happening in the present, and as this year's featured themes demonstrate, the present feels unstable. A new era of culture wars is unfolding, with cultural and educational institutions like museums caught in the middle, taking heat both for embracing and demurring on progressive stances. Dramatic advances in artificial intelligence technology have made their way to market, trailing with them a morass of questions about misinformation, job security, and intellectual property. Meanwhile, record-breaking wildfires and temperatures have

revealed the extent of the continuing climate crisis, urging us all to contemplate how we can reduce our carbon consumption.

This year's *TrendsWatch* asks how we might emerge from the volatile future these trends present not just intact, but better for it. After all, a future-minded museum is one in touch with its community—and poised to be a true community resource. As the people around us navigate the destabilizing changes of the future, they will need solid information, ethical solutions, and models of resilience. The better we try to stay not just with but ahead of our time, the better we will be able to guide and partner with our communities, actualizing our purpose in society more than ever before.

Consider this issue your invitation to start thinking big about our future, what challenges and opportunities will come with it, and how we can shape it for the better. At the Alliance, we look forward to building it along with you.

10/23/2023



Brooke Leonard is the Interim CEO & Chief of Staff at the American Alliance of Museums.



Our Volatile World

160

Educators fired
for political
reasons from
2020–2022.

30%

Percentage of hours
worked today that
could be automated by
2030 with the adoption
of generative AI.

300 million

Current jobs that could be eliminated or
diminished, globally, by generative AI.

90%

The increase in global
CO₂ emissions since
1970.

3.6 billion

People already
living in areas highly
susceptible to climate
change.

Sources: Clockwise from top: McKinsey Global Institute, [Generative AI and the Future of Work in America](#); Goldman Sachs; World Health Organization; Environmental Protection Agency; Washington Post analysis of news reports

17%

Segment of US adults who reported that they felt lonely “a lot of the day yesterday.” (That translates to 44 million American adults.)

50%

Percent by which adults with physical health issues are more likely to be lonely than those with strong physical health.

2,571

Unique book titles that were challenged or banned from US public and/or school libraries in 2022.

53%

Portion of hiring managers reporting that in the past year their company eliminated the requirement for a bachelor’s degree in some or all roles where it is not essential.

Sources: Clockwise from top: [Gallup National Health and Well-being Index, 2023](#); [2021 survey](#) commissioned by Cigna Corporation and conducted by Morning Consult; [Intelligent survey, 2023](#); [American Library Association's Office of Intellectual Freedom](#)

Andrey Suslov/Alamy Stock Vector

WE CANNOT
AFFORD
THE LUXURY
OF EITHER
HOPE
OR
DESPAIR



Welcome to *TrendsWatch*

“Standing still is the fastest way
of moving backwards in a rapidly
changing world.

—Lauren Bacall



HOW TO USE THIS REPORT

Use this edition of *TrendsWatch* as a catalyst for adapting to your museum's rapidly changing environment:

- What choices does your museum face regarding the utility and ethics of artificial intelligence?
- How can your museum reduce its carbon emissions and inspire the public to take action?
- When might your organization be caught up in the current culture wars, and how can you prepare strategies to respond?
- Who is currently excluded by your museum's hiring processes, and could you diversify your applicant pool by dropping unnecessary degree requirements?

Each article includes a list of things museums might do to tackle these issues. Share this report with your students, clients, colleagues, staff, volunteers, and board of trustees to foster discussion about how your organization will cope with a volatile future.

The theme of this year's *TrendsWatch* report is volatility—strategic foresight parlance for the speed of change. That speed has been increasing exponentially in recent decades. Google's director of engineering recently predicted that by 2041, we will be experiencing a year of change (by today's standards) in three months, and by 2071, a year of change in 11 days. That's the equivalent of 33 years of change in one year! The past 33 years gave us the World Wide Web, email, personal computers, and smartphones; we mapped the human genome and discovered how to edit individual genes. What will it be like to live through that amount of change in just one year? How can we make plans that can survive such rapid transformations?

On one hand, speed can be exhilarating. Open AI's ChatGPT launched in November 2022; by January 2023 it had 100 million active monthly global users. The user base is projected to grow to **117 million** in the US alone by 2025. The technology is amazing: it empowers anyone to be an artist or a writer. It helps students apply to college, journalists draft stories, and architects model the mechanics of their creations. People hope it will make legal services more affordable, education more effective, and brain surgery more accurate. On the surface, generative AI (GenAI) seems like another example of triumphant progress, promising to improve our lives as profoundly as penicillin.

But volatility has another connotation as well, not just rapid but also unpredictable change, often for the worse. It may be thrilling to go fast, but the prospect of rocketing into the future at warp speed, veering

erratically, bouncing off obstacles, is terrifying. GenAI is already disrupting whole industries, competing with illustrators, writers, and journalists and **displacing** 4,000 jobs a month. Goldman Sachs estimates that globally, 300 million current jobs are at risk of being automated by AI. In October 2023, the head of the Securities and Exchange Commission, testifying before the House Financial Services Committee, warned that, absent regulation, it is "nearly unavoidable" that AI will cause a massive financial crisis in the next decade. But that regulation will be hard to implement since the SEC is designed to oversee individual organizations and brokers, not the underlying systems, including AI algorithms, on which these entities rely. Creating effective guardrails for emerging technologies may require us to fundamentally reshape our regulatory infrastructure.

That's a second, underlying theme of this report: the need to reexamine and reinvent a lot of systems that shape our lives, systems that may have worked more or less well for a couple hundred years but now teeter on the edge of failure. Technology, combined with cultural, environmental, and financial stressors, has widened the partisan divide to the point where approximately **40 percent of all voters**, Republican and Democrat, believe that the other side is so extreme that it would be OK to use violence to prevent them from achieving their goals. The same study found a significant share of respondents expressing doubts about the future of democracy and even the United States as it is currently composed. Will we need to reform our civic infrastructure if democracy is to survive?

Emissions from over 200 years of reliance on fossil fuels have resulted in [temperatures](#) increasing more in the past 50 years than any 50-year period in the past two millennia. This astounding rate of change challenges our ability to respond: we have been unable to invent, test, and implement solutions fast enough to keep global CO₂ below critical levels. At the same time, we have to deal with the literal volatility of the climate crisis. Last year was the hottest on record, with four months in a row of record-breaking temperatures and the skies blanketed by the smoke of nearly 46 million acres burning across [Canada](#)—nine times the historical average. While some believe that technology can save us, it's clear that even with the best technologies, we will need to eat less meat, travel less often, and take up less space (in our homes and on the planet) to stick to a strict carbon diet.

Does all this seem intimidating? It does to me. One comforting thought: humans are supremely adaptable to change. Our great grandparents may have been terrified to hurtle down the highway at 75 mph—now we are so blasé about that speed we have to be reminded to keep both hands on the wheel (and thumbs off our phones). So maybe by the time humans reach 33 years of change in one year, this volatility will seem normal.

Another important thing to keep in mind: while some of this acceleration is beyond the control of any one individual, organization, or country, there are

things we can do to apply the brakes. We can take the time to savor the process of putting words on paper rather than using AI to generate our correspondence. We can choose to challenge the supremacy of efficiency and value the benefits of measured, thoughtful collaboration. Museums, as cultural influencers, can offer their communities a place to slow down and decompress. They can ally with the movements promoting slow art, slow tourism, and slow food. And we can remind each other that we don't have to go fast just because we can.

In the face of a volatile future, it's critical to cultivate what Dr. Jane McGonigal, of the Institute for the Future, calls “urgent optimism”: the desire to act immediately to tackle an obstacle, combined with the belief that we have a reasonable hope of success. I hope this report will foster that hope and leave you feeling empowered to make a difference.

Yours from the future,



Elizabeth Merritt

Vice President, Strategic Foresight, and Founding Director, Center for the Future of Museums, American Alliance of Museums

WHAT IS **TRENDSWATCH**?

TrendsWatch is the annual forecasting report produced by the Center for the Future of Museums, the American Alliance of Museums' think tank and idea laboratory for the museum field. Each edition is built on a year's worth of scanning and analysis of news, research, and conversations. The report goes out to members and subscribers as the January/February issue of *Museum* magazine, and a PDF version is released on the AAM website at the end of March. You can find dozens of embedded links to original sources for the information referenced in this text in the digital issue of *Museum* and in the PDF.

The text for this report was written by CFM's director, Elizabeth Merritt, with input and advice from many people inside and outside the museum sector. (See page 1 for the list of people who reviewed and commented on the articles.) We encourage you to join this conversation. Please share your thoughts and questions by:

- Joining the [Future of Museums Community](#) on AAM's Museum Junction discussion forum.
- [Submitting guest posts](#) to the [CFM blog](#).
- Emailing CFM at emerritt@aam-us.org.

Elizabeth and her colleagues are available to support your work via speaking engagements, workshops, moderating discussions, and consulting. For more information on those services and to request our help, visit the [Alliance Advisory Services and Speakers Bureau](#) on the AAM website.

"Party With Us: Pride Edition" at the Museum of Us in San Diego, California, featured local drag queens from the Haus of St. James.



Culture Wars 2.0

What choices do museums face in avoiding or engaging with the current conflict?



“The net effect of loud, sensational clamor is to mute more quiet and temperate voices.”

—James Davison Hunter, *Culture Wars: The Struggle to Define America*

Last year *TrendsWatch* examined the growing partisan divide in the US and how museums might help repair our fractured democracy. However, an adjacent trend threatens the sector’s ability to fill this reparative role: museums as battlegrounds in a new wave of culture wars. Some are criticizing museums for embracing progressive values, while others regard museums as conservative vestiges of a colonial past. With alarming frequency, climate activists use museums as stages for protest or vandalism to draw attention to their cause.

Pressure is building along fault lines that segment communities, funders, policymakers, and museums’ own staff, boards, and volunteers. How can museums defuse this tension before it causes more damage? What choices do they face in avoiding or engaging in the current conflict, and how will these choices shape the future of museums and society?

The Challenge

Disagreements about the values that should guide public and private life in America are as old as the republic itself, and these debates periodically erupt into physical violence ranging from insurrection to all-out war. The verbal conflict took center stage at the 1992 Republican National Convention when Patrick Buchanan told the audience that “a cultural war” was taking place, characterizing it as a “struggle for the soul of America.” The issues Buchanan named (abortion, homosexuality, school choice, and “radical”

feminism) continue to be points of contention, but the battlefield has ballooned to include, well, almost everything, from [holiday greetings to beer](#).

Thirty years later, the culture wars are heating up again, fueled by the power and reach of social media and the ascent of transparency as a core value. When every public meeting can be livestreamed on Facebook by anyone in the audience, there is scarce opportunity for nuanced discussions that can explore compromise and de-escalate conflict. Social media is now a major source of information for



In January 2023, demonstrators gathered to protest a Drag Story Hour at the Canton branch of the Enoch Pratt Free Library in Baltimore, Maryland.

Americans, and given the decline of professional journalism, it is often the primary platform for people to engage with current events.

The current state of P-12 education dramatizes the damage these conflicts can do to civic infrastructure. Teachers, already stressed by pandemic challenges, are barraged with complaints from parents and students about every detail of their work, including curricula, assignments, classroom decorations, and off-hand remarks. Even minor conflicts can go viral, spiraling into public campaigns calling for educators to be disciplined or fired. This relentless scrutiny has contributed to [record-high levels](#) of teacher burnout and turnover, to the migration of students from public to [private schools and to homeschooling](#), and to the [downsizing and closure](#) of school libraries.

These skirmishes are egged on, in part, by those that profit from amplifying conflict: politicians courting votes, journalists seeking readers, technology corporations building reach and engagement. But they also reflect real disagreements in society about what theologian John Davison Hunter calls “matters of ultimate moral truth,” things on which one cannot compromise. Many combatants see the issues as threats to their very existence: white nationalists fear they are being replaced by people of color; trans individuals fear erasure of their identities and their lives. Stable democracy requires compromise, but negotiation around existential issues, about what is moral and ethical, seems impossible.

While cultural nonprofits have long been drawn into this fray, they are now being targeted with particular vitriol. America’s public libraries (a

Via Flickr, photo by Stephen Meikisethian

system built with the largesse of Republican Andrew Carnegie) have become flashpoints for protests and penalties around progressive actions and values. We are seeing a record number of attempts to [ban books](#), [criminal complaints](#) against and [laws targeting librarians](#), and attempts to [defund and close libraries](#). The American Library Association itself is now [being attacked](#), nominally over the politics and identity of its CEO but more broadly over its support for and defense of its members. (This despite the fact that, as [the ALA points out](#), there is strong nonpartisan consensus about the value of libraries and librarians.)

One drawback of using the term “culture wars” is the implication that there are two clear sides arrayed against each other, but that framing is inaccurate and unhelpful. Both liberals and conservatives drastically overestimate the difference between their views and those of the other side while underestimating the difference in views within their own side—a phenomenon dubbed “false polarization.” In fact, [subgroups within political parties](#) are

complex and varied. (For example, the vast majority of Black voters are Democrats; 61 percent of Democrats believe a person’s gender can differ from the sex identified at birth; only 31 percent of [Black Democrats](#) agree.) And while there are intransigent differences of opinion, there are also areas of broad agreement: [9 in 10 Americans believe](#) that protecting free speech is an important part of American democracy, and people should be allowed to express unpopular opinions.

Another problem with framing these conflicts as a war is the implication that there can be a winner. Short of a [“national divorce,”](#) splitting Democrat- and Republican-leaning states into different countries (an option that is, in fact, supported by 20 percent of US adults), we have to find a way, as a society, to explore these differences openly, honestly, and with respect if we are to maintain a functional democracy. Making people aware of these areas of commonality might be the best hope for reducing false polarization. Perhaps, as the growing bipartisan [civic repair](#) movement recommends, instead of

POTENTIAL FUTURE BATTLES

Following are some challenges posed to museums by the ongoing culture wars in the coming decade:

Consumers have more choices than ever in how to engage with history, culture, and educational content. Will museums lose out if, as just one choice in this array, they are identified as affiliated with one set of political positions or another?

There are growing disconnects between the expectations of some major foundations and those of local, state, or federal government officials (for example, regarding training and policies supporting DEAI). How will museums navigate these tensions and other partisan issues that may affect funding, whether that support comes from public dollars or individual donors?

There are significant generational divides around many contentious issues today, and around expectations of how organizations should behave. How can museums respond to the concerns of both current and future audiences?

We have recently seen [high-profile boycotts of brands](#) (Bud Light, Chick-fil-A) and institutions (Walt Disney World) from the left and the right. In the future, might we see partisan boycotts regarding museum attendance and membership?

Will more activists begin to use museums as useful platforms for protest, deploying vandalism against objects, or violence and threats of violence to draw attention to their causes? How would that change operations—design, staffing, procedures—and how might tighter security make some people feel more, or less, safe and welcome?



RESOURCES

[Crisis Communications Guide](#), American Library Association

This brief guide outlines how to put a communication plan in place before a crisis occurs.

ala.org/advocacy/crisis-communications-guide

[Marketing Intelligence Hub](#), Listen First Project

This online resource shares data-driven guidance on how to communicate in a way that fosters interest, hope, and trust from Americans of all backgrounds and beliefs.

listenfirstproject.org/marketing-intelligence-hub

[Respecting Visitor Values: Audience Perceptions](#), 2022 Annual Survey of Museum Goers, Wilkening Consulting

This data story picks apart three main criticisms offered by the small percentage of museum-goers who do not believe that museums respect their personal values. (These categories correlated tightly with political values.)

bit.ly/RespectingVisitorValues

focusing on changing people’s views about issues, “we need to change their views about each other.”

What This Means for Museums

This isn’t the first time museums have been caught up in partisan struggles. Buchanan’s speech in 1992 helped define a decade of controversies that included criminal indictments against the [Cincinnati Contemporary Arts Center](#) on obscenity charges stemming from an exhibition of photographs by Robert Mapplethorpe; outcry over the Smithsonian’s interpretive plans regarding the B-29 Superfortress bomber [Enola Gay](#) (a resolution passed by the US Senate characterized the exhibit script as “revisionist and offensive to many World War II veterans”); and Mayor Rudy Giuliani threatening to defund and displace [the Brooklyn Museum of Art](#) because of the “sick stuff” on view in “Sensation: Young British Artists from the Saatchi Collection.”

These attacks come from the right and the left. Where Culture War 1.0 was fueled by the rise of the Moral Majority and other religious conservative movements, today’s culture war engages the

progressive left as well as the conservative right. It includes movements like Black Lives Matter, #MeToo, and LGBTQ+ activists—groups that want greater inclusivity and a greater sensitivity to harm, historical trauma, and legacies of exclusion and appropriation.

They also originate from inside *and* outside the organization. One source of tension is the fact that museum staff are [overwhelmingly liberal](#), while boards and donors often [skew conservative](#). This can complicate decisions around what topics the museum should address and what communities it should serve. In some instances, museum staff have called for their employers to cancel space rentals by conservative groups, distance themselves from objectionable donors, and remove exhibit material they found offensive. With increasing frequency, climate activists are using museums as platforms for protest, throwing paint on or gluing themselves to frames, vitrines, or the plex protecting iconic objects to draw attention to their cause.

Some of the public’s strongest reactions are prompted by museums revising their interpretation

MUSEUMS MIGHT ...

- Lead thoughtful, intentional conversations among board, leadership, and staff about their own values and how the museum should choose to engage or not engage on culture war issues.
- Establish frameworks and procedures for evaluating exhibits, programs, and event rentals for potential controversies, and create plans for how these controversies will be managed.
- Evaluate the language used in exhibits, programming, and communications. Identify partisan trigger words, and, when possible, find alternative terminology. (For example, some museums have found it is less controversial to say “our changing climate” rather than “climate change.”)
- Train staff on how to have difficult conversations with people who don’t share their beliefs and how to facilitate these conversations with others.
- Create policies, procedures, and training that equip staff to deal with angry or confrontational members of the public, and offer support to help them cope with the resulting stress.
- Strive to be “third places,” the increasingly rare venues that sociologist Ray Oldenburg has argued are vital to society, democracy, and civil society. By welcoming people of differing backgrounds and beliefs, museums can provide opportunities for them to socialize and get to know each other as individuals.
- Monitor legislation and legal decisions that can affect their operations, even when not directly aimed at museums, and address these issues in their advocacy. (Sign up for [Advocacy Alerts](#) and attend AAM’s annual Advocacy Day to inform this work.)

of history. [Monticello and other historic sites](#) have been castigated by some visitors and conservative commentators for introducing slave narratives into their interpretations. Texas is embroiled in a messy fight over how to tell the story of the [Alamo](#), which has been called the “creation myth of Texas.” Myths, especially when they amplify an inaccurate version of the past, can be toxic: perpetuating those inaccuracies, justifying past actions that caused harm, and over-amplifying the anti-inclusive values of a small (but politically powerful) segment of Americans. But any identity, individual or collective, is grounded in the stories we tell about ourselves. Can America have a unified national identity without shared stories we all buy into? Without that identity, will the country tear itself apart?

Ironically, the very respect accorded to museums, as stewards of culture and trusted sources of information, may amplify these pressures in the future. In the wake of protests over the murder of George Floyd in 2020, at least 200 [Confederate memorials](#) were removed, renamed, or relocated, and in many cases these monuments were transferred to museums. While the intent may have been a bipartisan solution (caring for the heritage in perpetuity while providing historical context), this approach is sometimes equally offensive to people who feel these objects should be destroyed and to those who object to “revisionist history.” With many schools abandoning controversial topics, museums may pick up the slack, just as they did over a decade ago when public schools largely [abandoned arts education](#). But while arts education is generally seen as benign, topics such as race and racism, gender and sexuality, and controversial social and political issues [are not](#). Some schools have reached out to museums to teach subjects they feel they can no longer handle. Will the outrage follow?

How can museums stay true to their role and their values without being sidelined by one faction or another? How can they retain bipartisan or nonpartisan credibility and influence while tackling difficult issues? Museums have the potential to foster healing or inflict harm, build bridges or deepen divides depending on how they respond to these challenges, but they face difficult choices. Museums might take

stands on issues that align with their mission and the values of staff and stakeholders. They might declare themselves to be noncombatants, serving as a cultural circuit breaker for the cycle of escalating outrage. They might play the role of peacemaker, helping people find common ground.

Each of these choices comes with potential benefits, and risks. Museums have earned broad, nonpartisan trust from the American public, and they can use that trust to educate and influence the public about important issues. On the other hand, taking a stand on contentious issues may result in a particular museum, or museums as a whole, being tagged as partisan, relegated to the echo chambers of people who already agree with them. The individuals and institutions that benefit from the culture wars thrive on public attention: perhaps sometimes museums might better serve vulnerable individuals, communities, and society as a whole by refusing to engage. But people who feel targeted by these conflicts may expect museums to weigh in with a statement or action that signals solidarity and support. Museums have long aspired to be public “[agora](#)” where people can come together to discuss important issues without feeling the need to self-censor. To ensure that people of all political identities feel welcome in these conversations, the museum itself might need to be seen as nonpartisan—neither liberal nor conservative—in its words and its actions.

Everyone loses when cultural and educational institutions are damaged by partisan skirmishing. Treating libraries, museums, and schools as active combatants in the culture wars destabilizes our already fragile social infrastructure by threatening some of the few remaining institutions trusted to provide accurate information and common reference points.

In his exploration of the culture wars, Hunter also observed that “the whole point of civil society ... is to provide mediating institutions to stand between the individual and the state, or the individual and the economy. They’re at their best when they are doing just that: They are mediating, they are educating.” By engaging in hard conversations, inside their organizations and with their communities, museums can continue to fill that critical role.



Taking a Stand

In June 2023, the Museum of Us hosted “Party With Us: Pride Edition,” a day of programming featuring San Diego drag queens from the Haus of St. James, in solidarity with LGBTQIA+ communities being inundated with hate and legislative efforts to undo hard-won civil rights protections. Despite the polarizing public debate on drag, the decision to host the event was consonant with the museum’s purpose to be a place for community voice, especially those voices that have been historically marginalized. This was consistent with the museum’s previous visible support of LGBTQIA+ communities. In 2015, immediately following the Supreme Court’s decision on same-sex marriage, the museum displayed an enormous Pride flag from its iconic California Tower to mark the occasion. Since 2022, the museum has also been the site for the city’s annual Pride kick-off, with a week-long display of an even bigger Progress Pride flag from the tower.

Being Noncombatants

By its very nature, successful noncombativity is a nonstory. While this makes it rare to find published examples of museums that have chosen not to “feed the beast,” museum professionals might use the confidentiality afforded at conferences and small gatherings to connect with colleagues who have personal experience to share.

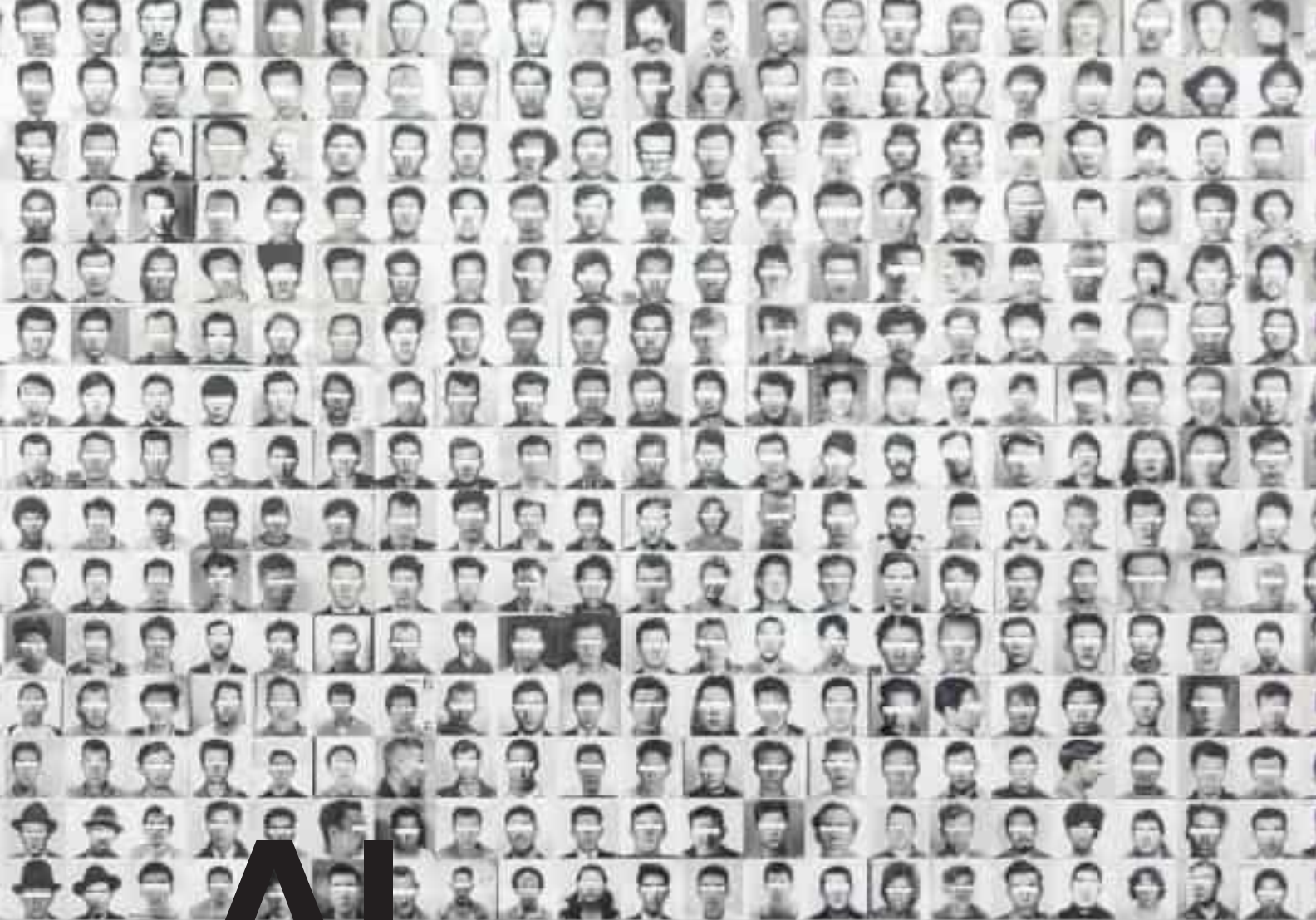
Playing Peacemaker

In 2019, the Frazier History Museum in Louisville, Kentucky, launched “[Let’s Talk: Bridging the Divide](#),” creating a flourishing community space for dialogue and questions on challenging topics that often divide us. The program’s name ties to the Frazier’s location on the so-called “9th Street Divide” that historically has separated the city by race. Through dozens of moderated panel discussions, the museum has given the public an opportunity to hear from guests with varying perspectives on wide-ranging and sometimes contentious issues, including mental health, political discourse, voting, racial equity, policing, education, and Native American history. One of the most recent programs was the first community conversation about a newly released report from the US Department of Justice critical of policing in Louisville. This groundbreaking gathering brought together the mayor, the acting police chief, and representatives from the NAACP, Louisville’s Urban League, and the Fraternal Order of Police. The museum staff who facilitate the programs observe, “The dialogue isn’t always easy, and navigating the discussion and audience questions can be tricky, but if you want to bridge divides, there has to be conversation.”



Trevor Paglen's *They Took the Faces from the Accused and the Dead...* (SD18), 2019, from the "Uncanny Valley: Being Human in the Age of AI" exhibition at the de Young Museum in San Francisco, California.





AI Adolescence

What is generative AI, and what are the practical applications and implications for museums?

Photo by Gary Sexton, courtesy of the artist, Altman Siegel Gallery, San Francisco and the Fine Arts Museums of San Francisco

“Success in creating AI would be the biggest event in human history. Unfortunately, it might also be the last, unless we learn how to avoid the risks.”

—Stephen Hawking

In the past decade, artificial intelligence (AI) has leapt from the realm of science fiction and tech culture into our everyday lives. Most recently, generative AI is disrupting the work of creators, upending education, and performing key tasks in white-collar work. Some feel AI poses an existential threat to humanity—others forecast that it will quickly retreat into specific, narrow applications.

What is AI, is the hype justified, and how can museums make informed judgments about this or any other emerging technology? What are the practical applications and implications for museums in the short and long term?

The Challenge

Artificial intelligence encompasses a range of technologies that seem to mimic human ability to reason, make decisions, generate predictions, and perform complex tasks. Birthed in the 1950s, when Dartmouth professor John McCarthy coined the term and Alan Turing proposed his commonsense test for machine intelligence, AI literally began toddling in 1966, when the Stanford Research Institute introduced “Shakey,” the first mobile robot capable of interpreting instructions.

When *TrendsWatch* first covered AI in 2017, the major focus was “big data”: mining and analyzing huge datasets to generate business insights (or beat human grandmasters at chess) and using AI conversational skills to interact with users and respond to questions. Now AI is experiencing an adolescent growth spurt, fueled by the ability of generative AI (GenAI) to create original content as text, images, and sound. If chatbots powered by conversational AI might be mistaken for customer service reps, programs like ChatGPT and DALL-E, powered by GenAI, are trying

Students, faculty, and staff at Duke University’s Nasher Museum of Art used OpenAI’s ChatGPT platform to select works and write label copy for “Act as If You Are a Curator: An AI-Generated Exhibition.”



Photo by Cornell Watson

HOW GENERATIVE AI MIGHT HARM THE CREATIVE ECONOMY

By ChatGPT

This essay was written by OpenAI's ChatGPT 3.5 in response to the prompt "Write 500 words on the damage generative artificial intelligence may do to the creative economy." The program returned the following text in less than 10 seconds.

Generative artificial intelligence (AI) has emerged as a powerful tool, capable of producing creative content such as art, music, and literature. While it offers numerous benefits, there is growing concern about the potential damage it may inflict on the creative economy, particularly on artists and writers. This essay explores the multifaceted ways in which generative AI can harm the creative economy.

- 1. Devaluation of creative work.** Generative AI can flood the market with easily produced content, devaluing the work of human artists and writers. As AI-generated art becomes more prevalent, traditional art may lose its uniqueness and value. Consumers may be less willing to pay for original creations when cheaper AI alternatives are available, thereby reducing the income of artists and writers who rely on their work for a livelihood.
- 2. Copyright and plagiarism issues.** AI-generated content can blur the lines of copyright and intellectual property rights. Identifying the origin of a piece of content becomes challenging when AI creates works that closely mimic human creations. This can lead to a surge in plagiarism, where AI-generated work is passed off as original, causing financial and reputational harm to genuine creators.
- 3. Homogenization of creativity.** Generative AI algorithms are often trained on a massive corpus of existing creative works. While this can lead to impressive imitation, it can also result in a homogenization of creativity. The AI may perpetuate existing styles and trends rather than encouraging innovation and the exploration of new artistic frontiers. This stifling of creativity can be detrimental to the vibrant and diverse nature of the creative economy.
- 4. Erosion of skill development.** If AI becomes the primary tool for generating creative content, it could discourage aspiring artists and writers from developing their skills. The sense of accomplishment and personal growth that comes from honing one's craft may diminish, as people may opt for AI shortcuts. This could ultimately lead to a decline in the quality of human-created art and literature.
- 5. Job displacement.** The adoption of generative AI in the creative industry could lead to job displacement. Artists and writers may find themselves competing with AI systems that can produce content more quickly and cost-effectively. This could result in job loss and economic instability for many individuals in the creative sector.
- 6. Loss of emotional connection.** Art and literature often have a profound emotional impact on consumers because they are imbued with the personal experiences and perspectives of the creator. AI-generated content may lack this emotional depth, making it harder for audiences to connect with the work on a meaningful level. This could result in a decline in the overall appreciation of art and literature.
- 7. Ethical concerns.** Generative AI can inadvertently create content that is offensive, harmful, or biased, which can have a negative impact on society and culture. Artists and writers often contribute to important conversations and social change through their work. If AI-generated content lacks ethical considerations, it may contribute to harmful narratives and reinforce existing biases.

In conclusion, while generative AI holds immense promise in the realm of creativity, it also poses significant threats to the creative economy, including artists and writers. To mitigate these risks, there is a need for thoughtful regulation, ethical guidelines, and a recognition of the value of human creativity. Generative AI should be seen as a tool to enhance human creativity rather than a replacement for it. By carefully navigating the integration of AI into the creative process, we can harness its potential while preserving the vitality and diversity of the creative economy.

MUSEUMS MIGHT ...

- Help the public make informed choices, as users and voters, by providing education on AI and attendant issues.
- Explore how AI-generated content could be used to enhance collections, exhibits, education, and visitor interactions.
- Educate staff and the board about the choices the museum faces regarding AI use.
- Create ethical frameworks for decision-making.
- Take an active role in developing policies, guidelines, and regulations around issues such as sourcing of training data, tracking of content provenance, and protecting the rights of creators.
- Identify where AI can be used to help staff do their work while assessing the impact on museum labor overall.

out for the roles of author, artist, and composer.

ChatGPT is just one of a slew of GenAI programs taking the world by storm. A [2023 McKinsey survey](#) found that over 79 percent of respondents had some exposure to GenAI and nearly a quarter were using it regularly in their work. It is being used by students for [writing assignments](#), researchers for [academic papers](#), lawyers to produce [legal briefs](#), and high school students to generate [college application essays](#). In the process, developers of GenAI seem to be obeying Meta founder Mark Zuckerberg's exhortation to "move fast and break things." The growing list of things that, if not broken, at least cracked by generative AI ranges from copyright and intellectual property to both primary and higher education.

Some of the disruptions created by GenAI arise from flaws deeply embedded in the current algorithms. GenAI has a well-documented tendency to "hallucinate" (i.e., make shit up). In 2023, a [Federal District Court judge](#) threatened to sanction lawyers who used ChatGPT to generate a filing that turned out

to be filled with fake judicial opinions and legal citations, and staff of the research platform [Preprints.org](#) removed a ChatGPT-written submission that included fictitious references. GenAI also has an unfortunate tendency to amplify bias inherited from its training data. As [Bloomberg](#) recently reported, to judge by the outputs of the Stable Diffusion image generator, "CEOs are white men; women are rarely doctors, lawyers or judges; men with dark skin commit crimes; and women with dark skin flip burgers."

Any new technology can have a disruptive effect on labor, with the heaviest impact historically falling on blue-collar jobs. AI, and particularly generative AI, may be the first technology to destabilize white-collar work as well. We are already seeing grave threats to whole professions, especially in the [creative class](#). Text and image generators are producing [cover art](#), writing [news stories](#), and producing blog posts and marketing copy. One of the major demands of the Hollywood strike of 2023 was restricting studios' use of AI, both to create [digital likenesses of actors](#) and to [generate scripts](#). While this new technology will create some high-skill, adequately compensated jobs (AI research scientist, AI creative director), they will be outnumbered by [more precarious and stressful gig work](#), such as labeling training data and flagging content that contains sexual abuse, hate speech, and violence.

AI's potential to do harm goes beyond its effect on labor. Its power, reach, and plausibility supercharges the dissemination of false information and fake content, including videos, news articles, social media posts, and even [books](#). The [chairman of the Senate Intelligence Committee](#) has warned that misinformation generated and promulgated using AI could disrupt the 2024 presidential election. Even when used for good, like improving education, the widespread adoption of GenAI could widen the digital divide. While most of the current wave of AI applications have launched on a [freemium](#) model, eventually, to be profitable, the companies that create and deploy this technology will have to charge. The more these applications become embedded and necessary tools, the more we risk exacerbating existing inequalities due to disparate levels of access and ability to pay.

This technology is evolving so fast that the sectors impacted by its application, as well as regulators, are



Visitors to The Dalí Museum in St. Petersburg, Florida, interact with the museum's *Dream Tapestry* digital experience where personal dreams transform into one-of-a-kind art pieces.

struggling to keep up. How should [existing laws](#) and policies, written before the age of AI, be applied with regard to intellectual property, liability for harm or damage, privacy, bias, and discrimination in employment? What new regulation is needed, and how should we allow, ban, control, or regulate use? What role should GenAI play in P-12 and higher education, hiring, research, or law enforcement?

What's Next?

Will AI continue to accelerate at the current hyper-sonic rate? As with many technologies financed by large companies, the long-term business model is not yet clear. While [OpenAI](#), the creator of ChatGPT, projected \$200 million in revenue by the end of 2023, it was spending \$700,000 a day to run the system, leaving it in the red. It remains to be seen whether it can convert enough free users into paid customers to make the product sustainable.

When regulators do catch up with the system, the constraints placed on how data is mined, and used, may severely crimp the growth of a system that was

fueled by exploiting free content (a practice that has already spawned [numerous lawsuits](#)). Ironically, by displacing human creators, GenAI may have sowed the seeds of its own destruction. GenAI trains on datasets collected from the internet, but when it learns from data produced by other AI, its performance de-generates, resulting in what researchers have dubbed "[model collapse](#)." That breaking point may not be far off: the European security center [Europol](#) predicts that as much as 90 percent of online content might be "synthetically generated" by 2026.

What This Means for Museums

Museums have been experimenting with various flavors of AI for at least two decades, from practical applications ([Indianapolis Museum of Art at Newfields](#) using AI to crop digitized images) to playful (the wonderful Send Me SFMOMA, which responded to text prompts with images from the collection). Museums have deployed [AI-powered robots](#) as docents, predictive analytics to [forecast](#)

RESOURCES

Generative Artificial Intelligence and Data Privacy: A Primer, Congressional Research Service, 2023

This publication provides an overview of generative AI, an explanation of the underlying data models and data sources, and what happens to data shared with AI models. It also outlines policy considerations with regard to privacy and related laws, and data scraping.

crsreports.congress.gov/product/pdf/R/R47569

Blueprint for an AI Bill of Rights: Making Automated Systems Work for the American People, White House Office of Science and Technology Policy, 2022

This document identifies five principles to guide the design, use, and deployment of automated systems to "protect the American public in the age of artificial intelligence," including the rights to algorithmic discrimination protection and data privacy. The framework is accompanied by a technical handbook for anyone seeking to incorporate these protections into policies and practice.

whitehouse.gov/ostp/ai-bill-of-rights



these digital assets into the AI universe?

GenAI is trained on vast datasets compiled by scraping text and images from the web—without permission from or compensation to the creators of that material. Many artists, educators, and researchers are furious that GenAI harvests their work without consent, acknowledgement, or compensation. Do museums want to encourage the development and use of technology that is based on what many feel is ethically, if not yet legally,

[visitation](#) and [set ticket prices](#), cognitive search to enhance [collections metadata](#), and [sentiment analysis](#) to mine visitors’ social media posts. At the Museum of Tomorrow in Rio de Janeiro, Brazil, the AI-powered chatbot [Iris+](#) queries visitors about their experience and suggests steps they can take to address their biggest concerns about the future.

It is no surprise that museums have leapt to experiment with GenAI as well. In 2023, Duke University students and faculty used ChatGPT to organize the exhibition “[Act as If You Are a Curator](#)” at the Nasher Museum of Art, prompting the platform to select works from the collection and write labels. Behind the scenes, some museums are experimenting with text generators to create communications for members and donors, draft reports, and even [write grant applications](#). But for all the exciting new possibilities presented by GenAI, it poses profound challenges to museums as well.

A general erosion in trust accelerated by AI-generated misinformation (accidental or deliberate) might impact the long-standing and robust trust the public has in museums, or it may be an opportunity for museums to lean into their reputation as sources of reliable information. What role might museums play in creating systems to verify “[content provenance](#)”—the source and legitimacy of images, videos, text, and articles? How can museums ensure that data and metadata associated with their own records follow

theft of intellectual property? How might museums help protect creative, educational, and academic communities of practice from harm and advocate for their interests?

AI and GenAI provide opportunities to increase income and reduce costs. Museums need to decide whether, when, and how to adopt this technology—decisions that are both values-based and practical. Some may seem like clear wins: using chatbots to provide personalized experiences for visitors, image recognition to help the public engage with collections, and business applications to forecast attendance. Others may require more thought. How should AI be deployed to help staff with their work? If the use of AI could reduce the number of staff, do museums want to be complicit in this loss? AI depends on [vast computational resources and massive energy use](#). How might museums factor AI’s environmental impact into their strategies to reduce their carbon impact?

Working through these issues will require museum board members and staff to acquire basic AI literacy to understand its benefits and drawbacks and identify where AI adoption might require expenditures (in technology, training, new staff) or result in savings (through increased productivity or staff reductions). Hardest of all, it will require making some projections about the timeline of development and adoption of AI, a critical issue on which even the experts disagree.



In October 2022, the **Museum of Science, Boston**, opened the permanent exhibition “**Exploring AI: Making the Invisible Visible**” to illuminate how the approaches and data used to train computer systems have often resulted in AI that mirrors human biases, raising questions about unchecked use of these technologies across all aspects of our lives. Complementing the exhibition, a series of in-person and online **programs** dove into topics such as computer vision, large language models, generative AI, and deepfakes to encourage community deliberation about the future of AI technologies. The museum also created a **resource library**—including animated explainers, infographics, videos, and games—that challenges learners to consider how we can ensure that our society creates and uses AI technologies in ways that are ethical, inclusive, and can benefit all people.



In 2022, the **Carnegie Science Center** in Pittsburgh hosted researchers from Carnegie Mellon University’s Human-Computer Interaction Institute to pilot a Novel Research-based Intelligent Lifelong Learning Apparatus (**NoRILLA**) with support from the National Science Foundation. This AI-enhanced interactive science exhibit adds a camera, touchscreen, display, and an AI assistant to a traditional earthquake table or other physical apparatus, such as ramps. NoRILLA—brought to life as a virtual gorilla—helps participants make scientific discoveries through interactive feedback and guidance. Evaluations revealed that children learned significantly more from the AI-enhanced intelligent science exhibit compared to the traditional exhibit, and the dwell time increased by a factor of four. NoRILLA has since deployed at the Children’s Museum of Atlanta, the Please Touch Museum in Philadelphia, the Children’s Discovery Museum of San Jose, and the CaixaForum Valencia in Spain. Read more about NoRILLA in the *Journal of the Learning Sciences* at bit.ly/NoRILLAJLS.



Beginning in 2015, the **Illinois Holocaust Museum** has worked with the USC Shoah Foundation to capture Holocaust survivor stories and bring them to life via high-definition, AI-powered holograms paired with voice-recognition technology. The resulting **Survivor Stories Experience** enables the interviewees to tell their deeply moving stories and respond to questions from the audience, inviting visitors to have a personalized, one-on-one “conversation.” The museum’s own research and national studies show that Holocaust survivors’ stories humanize difficult history, helping visitors develop empathy, learn the dangers of indifference, and recognize their responsibility to stand up to hatred and antisemitism. Recent research by the University of Illinois finds that visiting the museum and seeing the holograms empowered and motivated attendees to address injustice in their lives and communities.

Decarbonizing the Future

How can museums reduce their own emissions and inspire the public to take action?

ID OF FUEL

In the United States,
Tracking

TWO WORLDS

Cause and Effect

Over the last 100 years, the world has seen a dramatic increase in greenhouse gas emissions. This has led to a significant rise in global temperatures, causing a range of climate-related impacts. The world is now facing a climate crisis that requires urgent action.

Cumulative Emissions





In October 2023, the Climate Museum opened “THE END OF FOSSIL FUEL,” an exhibition that “explores the fossil fuel industry’s history of racism and deception, spotlights the success of the environmental and climate justice movement in resisting and reversing the industry’s harms, and invites visitors to take action in community.”

Sari Goodfriend

“Adults keep saying we owe it to the young people to give them hope, but ... I don’t want you to be hopeful. I want you to panic. I want you to feel the fear I feel every day. ... I want you to act as you would in a crisis. I want you to act as if the house was on fire, because it is.”

—Greta Thunberg, who became a climate activist at the age of 15

The climate crisis poses an overwhelming threat to museums and the communities they serve. Museums’ collections constitute a vast seedbank of human civilization, creativity, and accomplishments. Protecting those seeds will entail a commitment to decarbonizing the future—replacing our dependence on fossil fuels with sustainable systems.

How can museums decarbonize their own operations? How can they inspire people to take meaningful action in response to the climate crisis, even as they prepare to live in a profoundly disrupted future?

The Challenge

How we talk about the world shapes how we think about the world: nowhere is this more evident than the evolution in language describing climate change. In 2019, *The Guardian*, Britain's equivalent to *The New York Times*, announced that to more accurately describe the environmental challenges facing the world, it would henceforth refer to the "climate emergency" or "climate crisis" rather than to "climate change." Now we are creating a whole new terminology to describe the impact of this crisis on mental health, grouped under the heading of climate trauma. This taxonomy includes climate anxiety (a sense of impending dread); solastalgia (distress at the changes in one's home environment); and eco-grief (anguish and despair at the deterioration of the places we love).

Scientists around the world are struggling to bracket the best and worst possible outcomes of the current climate trends, but it's clear that even the rosiest credible projections are grim. The [Inevitable Policy Response](#) consortium concludes that by 2050 the world will likely achieve the [Paris Agreement](#) goals to limit global warming to an increase of 1.5° C to 2° C above preindustrial levels. This may be unduly optimistic, however, in light of the fact that, as the UN Environment Programme reports, every one of the 196 countries that signed on to the agreement is [falling short of these goals](#). At the pessimistic end of the spectrum, Columbia University scientist James Hansen, who briefed the Senate about global heating way back in 1988, predicts we are approaching a "[new climate frontier](#)" with temperatures higher than at any point in the past million years.

This crisis poses an immediate and deadly threat. Record temperatures are directly responsible for a soaring number of [heat-related deaths](#) and record-breaking [wildfires](#), [drought](#), and [flooding](#). In the near term, these changes threaten economies, ecosystems, and agriculture. We are fast approaching irreversible [tipping points](#), including the collapse of ice sheets and ocean circulation, loss of glaciers, and the dieback of coral reefs and rainforests. Warming, combined with habitat destruction and introduction of invasive species, has triggered the sixth [mass extinction](#) in Earth's history, which may wipe out up to a million species. For humans, a warming world increases

disease, injury, and death rates. It also contributes to a [global crisis in mental health](#), with rates of [suicide](#) rising in step with global temperature, climate disasters triggering acute stress and PTSD, and climate disruptions leading to [long-term depression and anxiety](#).

Industrialization has flooded the atmosphere with CO₂, getting us into this mess. Theoretically, we could dig ourselves out by capturing and storing carbon (biologically, geologically, or technologically), but so far, the majority of such projects have either [failed or fallen significantly short](#) of their goals. Many of the "[carbon credits](#)" pitched to individuals and corporations as a way to offset emissions are illusory, unverified, or temporary. Gaining control over the climate crisis, the [UN Environment Programme](#) has declared, will require urgent, system-wide transformation. That includes putting ourselves on a strict carbon diet when it comes to both public infrastructure and individual behavior. This includes, critically, curbing the consumption (for travel, meat, material possessions) that has become synonymous with success. It may require [degrowth](#)—focusing on sustainable metrics of success such as health, education, and happiness rather than economic profit.

While efforts to tackle this crisis have been slowed by climate skeptics and misinformation, relentless communication by scientists and activists is having an impact. The [Yale Program on Climate Change Communication](#) reports that public understanding of climate risk has [improved since 2008](#), when the group first began tracking public opinion. As of 2013, the Americans who think global warming is happening outnumber those who think it is not by a ratio of nearly 5 to 1, and 60 percent understand it is caused by humans. On the other hand, climate change ranks [17th out of 21 national issues](#) concerning Americans, trailing far behind the economy, health care costs, terrorism, and the budget deficit. How can we bump up climate action on this list of priorities and increase people's willingness to act?

What This Means for Museums

Of paramount concern is the fact that the climate crisis is harming the communities that museums exist to serve, posing particular risk to the very young and the very old, people with disabilities or chronic medical



Architectural rendering of the southeast view of the Charles and Stacie Mathewson Education and Research Center at the Nevada Museum of Art.

CARBON MANAGEMENT AT THE NEVADA MUSEUM OF ART

By Colin M. Robertson, Charles N. Mathewson Senior Vice President of Education and Research

“We are learning from Indigenous artists and partners to better understand and refine our role as a cultural institution in addressing climate justice, land and water use.”—David B. Walker, CEO, Nevada Museum of Art

As a cultural institution located in Reno, the Nevada Museum of Art has a vested interest in climate action. In 2022, the nonprofit research organization Climate Center named Reno the city with the fastest-warming climate in the United States—since 1970, summer temperatures in our city have risen 10.9 degrees. We are committed to positively impacting our own micro-climate by reducing our carbon emissions and inspiring our community to learn and take further action.

- Nevada’s geography, climate, and hydrogeology are embedded in our museum’s architecture and visual identity.
- Our building, designed by architect Will Bruder, is inspired by a basalt rock formation endemic to the high desert of the Great Basin.
- Our visual identity and branding, designed by Brad Bartlett, are based on geothermal heat maps of Reno, and the thermal data visualized on our website reflects hourly, daily, and seasonal temperature changes.
- Our Center for Art + Environment, launched in 2008, stewards a substantial and growing collection of archives, special collections, and unique publications related to creative interactions between artists and the environment.

To extend the museum’s commitment to art and the environment institutionally, and to align with the Paris Climate Agreement’s imperatives to reduce waste and the world’s carbon emissions, in 2022 we worked with the Ki Futures program—an Amsterdam-based program designed for the cultural sector by the non-profit organization Ki Culture—to produce a Sustainability Action Plan (bit.ly/NVMAActionPlan) addressing climate justice and carbon accounting.

To optimize our museum’s carbon footprint, we use a comprehensive carbon accounting platform developed by nZero Inc. to analyze and ameliorate our direct and indirect emissions. nZero’s dashboard visualizes our energy consumption and emissions data in real time—a sometimes sobering exercise, given the cooling and humidification requirements in a high desert environment.

As new infrastructure comes online during the construction of our 50,000-square-foot Charles and Stacie Mathewson Education and Research Center, we anticipate our carbon footprint will improve despite increasing the overall size of our museum. One goal of our groundbreaking exhibition “Into the Time Horizon” (opening in 2026) is to reduce an exhibition’s carbon footprint by better utilizing permanent collections in combination with signature international loans and commissions.

We would like to thank nZero, the Teiger Foundation, and the Helen Frankenthaler Foundation for their support of the Nevada Museum of Art’s sustainability initiatives.

conditions, people of color, people with low incomes, and Indigenous peoples. More than 90 US coastal communities currently experience [chronic flooding](#), and that number is expected to rise to over 170 in the next two decades. By 2100, as many as [13 million people](#) in the US could be forced by rising sea levels to relocate, stressing the economies, housing, and infrastructure of the cities that receive these displaced populations.

The risks facing museums themselves are clear and comprehensive. To name just a few:

- Over a third of US museums lie within 100 kilometers of the coast—a quarter in zones highly vulnerable to sea level rise and severe storms.
- Sixteen percent of Americans live in areas at [high risk of wildfire](#)—this will rise to 21 percent in the next three decades as the risk zones for fire expand. US museums, which tend to co-locate with population, face similar exposure.
- Museum buildings and HVAC systems were built for climate conditions that are rapidly becoming out of date. The stress on these systems, and costs of remediation, will only increase with time.
- As [plant hardiness zones shift north](#), historic properties and botanic gardens face a future in which their original landscaping and collections cannot survive.
- The increase in the number of [extreme heat days](#) annually is encroaching on attendance and outdoor space rentals.
- The climate crisis is [making insurance more expensive](#). Major insurers have already [stopped writing new policies](#) in California, Florida, and Louisiana, and this list of “uninsurable” areas is expected to grow.

- Climate risk will put additional pressure on museums racing to document and preserve archaeological sites, habitats, and endangered species.

Museums can respond to these challenges both internally, through how they operate, and externally, through how they work with their communities and influence the public.

[The Carbon Inventory Project](#) estimates that the US museum sector annually emits an estimated 4 million metric tons of CO₂e, or carbon dioxide equivalent, which expresses the total greenhouse gases emitted in terms of the equivalent measurement of carbon dioxide. This is equivalent to the emissions of about [83,000 US households](#). As the Culture Over Carbon initiative points out, reducing those emissions by 30 percent would be the equivalent of taking three natural-gas-fired power plants offline or 271,000 cars off the road. If the entire sector reduced its annual energy consumption by 50 percent, the related emissions reductions would be equivalent to eliminating five such power plants or 452,000 passenger vehicles (more than all the registered vehicles in Maine).

There is [consensus](#) among the general public, even stronger among frequent museum-goers, that museums should be working to reduce their carbon footprints and operate in more sustainable ways. These improvements could encompass design, construction, energy use, land management, digital activities, and all other aspects of museum operations. Choices range from moving the museum to a more sustainable site to reducing reliance on travelling exhibits and collection loans. Given the tremendous carbon output tied to [computation and data storage](#) on “the cloud,” museums may also need to assess the impact

RESOURCES

[Culture Over Carbon: Understanding the Impact of Museums' Energy Use](#), New Buildings Institute, 2023

This report shares energy data from more than 130 participating institutions, including zoos and aquariums, gardens, historic sites, and five types of museums. The report also includes recommendations for energy saving strategies geared to cultural institutions.

ecprs.org/engagement/culture-over-carbon

[Toolkit on Sustainability in the Museum Practice](#), International Committee for Museums and Collections of Modern Art
Launched in 2021 and updated in 2023, this toolkit offers museums resources, tools, guidelines, and examples to promote sustainable change related to equity, inclusion, diversity, justice, environmental respect, and sustainable economic growth.

bit.ly/46Or2kk

of their digital practices. (Even [removing images from email signatures](#) has a measurable impact on carbon emissions.)

Some of these changes will require museums to revisit and revise old standards, which can be deeply embedded in intransigent systems. The museum sector is slowly chipping away at [inflexible and unsustainable standards](#) for climate control, but even as some museums around the globe [adjust their HVAC](#) systems to allow a greater range of temperature and humidity, many contend with loan agreements that adhere to old conventions.

There is overwhelming, broad-based support for museums of all types to educate the public about climate change. Not just science centers, natural history museums, zoos, and aquariums (as one might expect), but also art museums, history museums, historic sites, and children's museums. No other type of institution in American life is more [trusted](#) than museums, and when it comes to information on [climate change specifically](#), only scientists and researchers rank as more credible. (It's always good news when science wins.)

What message should museums send when teaching about the climate crisis? It may not be as simple as making more people understand, and believe, what is likely to happen. [Research](#) suggests that if people are confronted with projections that are too depressing and scary, they disengage and are even *less* likely to take action. (Case in point: How did reading the opening of this article make you feel?) Some advocate "[climate optimism](#)": fostering change by helping people believe they can make a difference, creating a positive feedback loop of action and hope.

Crafting the appropriate message is also complicated by wide uncertainties around what we face. Museums can't assure people "if you do this and support that, all will be well." Even if we take every recommended action, many generations will live in a significantly warmer world. However, museums can help people understand that their actions can help avert the worst-case scenario while simultaneously preparing them to live in a profoundly altered world. Museums can help people think about uncomfortable truths *and* feel empowered to do things that can make things better.

MUSEUMS MIGHT ...

Internally, as organizations and as a sector

- Measure and report on their own carbon emissions as a first step toward reduction; integrate carbon goals into their strategic and operational plans.
- Implement climate-friendly policies and procedures that minimize emissions, such as supporting remote work. (Hybrid employees who work from home two to four days per week [reduce their emissions by 11 to 29 percent](#) compared to full-time on-site workers.)
- Question the dominant paradigm that success requires growth. What would "degrowth" look like in museums? Might it entail less travel for research, fewer loans, and capping the museum's footprint and attendant energy costs?
- Make thoughtful decisions about funding. Some wealth is tied directly to practices that fuel the climate crisis. When are grants, sponsorships, or donations an appropriate form of reparative practice, and when do they insulate individuals and corporations from the need to make fundamental changes to their business models?
- Work together as a sector to revisit expectations on climate control so that museums are not required or pressured to conform to environmentally unsustainable standards.
- Join initiatives such as [We Are Still In](#), the [Museums & Climate Change Initiative](#), the [Climate Heritage Network](#), and the [Coalition of Museums for Climate Justice](#) to foster organizational and collective action.

Externally

- Use their knowledge, perspective, and trusted status to advocate for climate actions by individuals, businesses, and government.
- Motivate members of the public to take action by changing their own lifestyles and advocating for change at the local, state, and federal levels.
- Organize and host constructive community conversations, workshops, speaker series, and programs that resonate across the political spectrum and help people think critically about these issues.
- Help individuals and communities cope with the stress and grief inflicted by climate impact.

MUSEUM EXAMPLES



In 2021, the board of the **Discover Museum** in Acton, Massachusetts, approved a [five-year Sustainability Plan](#) that outlines more than two dozen action steps across all areas of its operations to reduce greenhouse gas emissions and decrease its carbon footprint, reduce water usage, minimize waste generation, invest sustainably, and advocate for climate action. All these steps support the larger goal of inspiring others to climate action. A cornerstone of the plan is the installation of a 326 kWh solar array over a portion of the parking lot that generates more than 100 percent of the museum's electricity on-site, with the excess sold to five other nonprofit organizations at a discount. The solar array, which became operational in summer 2022, represents a CO₂ reduction equal to preserving 317 acres of forest. In June 2022, the museum kicked off a first-of-its-kind carbon offset program for members, staff, and volunteers and in September 2023 provided carbon offsets for all other visitors.



Each spring, the [National Nordic Museum](#) in Seattle hosts corporate leaders, policymakers, and scholars for its annual Nordic Innovation Summit. Launched in 2018, the summit strengthens ties between the technology and innovation sectors in the Nordic countries and the Pacific Northwest—two regions advancing cleantech solutions. It is now a week-long event that serves over 400 on-site attendees and thousands through a live webcast. The theme of 2023's summit was “Sustaining Sustainability”—the idea that by doing good (through environmental, social, and governance commitments), a company can do well financially. Highlights included Governor Jay Inslee pitching business opportunities in Washington State to Nordic cleantech companies; Henrik Henriksson, CEO of H2 Green Steel, sharing how his company is reducing 95 percent of carbon emissions in the industry; and executives at Volta Truck discussing the US launch of their 16-ton, all-electric commercial vehicle. This program exemplifies how the National Nordic Museum lives its values as a neutral convener for climate-crisis cooperation.



In 2021, the [Peabody Essex Museum](#) (PEM) in Salem, Massachusetts, launched a Climate + Environment Initiative with the goal of sparking conversation, motivating action, and inspiring creative solutions. Designed to be simultaneously outward-facing and inward-looking, the initiative produces a series of ongoing exhibitions and public programs while implementing institutional protocols to mitigate climate impact, such as creating reusable exhibition design systems, offering sustainable products in the shop, and transitioning to renewable energy sources. A museum-wide staff cohort meets regularly to propose ideas to make PEM a more sustainable and climate-forward institution. PEM also hosts Salem's annual Preservation in a Changing Climate conference with the city and has recently partnered with Mass Audubon to help establish a regional Youth Climate Leaders Club. Through its efforts, PEM seeks to be a community partner and a hub for engagement, empowering other organizations to take similar actions to confront the biggest challenge of our time.

Dropping the Degree

Sixty percent of Americans may find their job search stalling when they hit a “paper ceiling” that ensures that applicants without a four-year college degree advance only so far. This requirement

excludes 70 percent of Black job seekers, 80 percent of Latinos, and three-quarters of American Indians and Alaskan Natives.

Many of the positions above this ceiling don’t actually require college experience, and many

potential workers have acquired relevant skills through alternative routes, including community college, military service, and on-the-job experience. But requiring a degree has become a common practice in part because it is an

Eastern State Penitentiary Historic Site (ESPHS) overhauled its recruitment strategy to hire “returning citizens”—people with lived experience behind prison walls. ESPHS encourages other museums to follow suit and include returning citizens in interpreting and reimagining museums.

Photo by Luis Cruz Duarte, courtesy of Eastern State Penitentiary Historic Site, Philadelphia, PA





The *Tear the Paper Ceiling* art installation, made up of more than 30,000 resumes, was presented by Google.org at the 2023 ASU+GSV Summit in San Diego, California.

efficient way to filter a deluge of digital applications.

The paper ceiling doesn't just keep people from getting jobs; it [damages lives](#) in a host of ways. In the US, people without a four-year degree are less likely to own their own home, are more likely to suffer from depression, and have a life-expectancy eight years shorter than their college-educated peers. While it's difficult to untangle cause and effect, it's clear that barriers to hiring help fuel the social and economic stratification of society.

Museums and the Paper Ceiling

Data suggests museums have succumbed to “over-credentialing” as well. Ninety percent of

museum workers represented in the last [national salary survey, in 2017](#), held at least a bachelor's degree, versus 33 percent of the general population. More than 77 percent of technician/preparators (a position described as “typically requiring manual skills related to duties”) have a four-year degree or higher. This overshoot may stem in part from the attitudes and behavior of job seekers: for example, highly educated creatives may see museum employment as a desirable way to fund their independent work. However, having a large pool of highly credentialed applicants can normalize museums' expectation that they can, and therefore should, fill these positions with college graduates.

Two challenges are pushing museums to revisit traditional hiring practices, the most recent being the nonprofit labor shortage. As museums recover and restaff following the pandemic, [60 percent of directors](#) report they are having trouble filling open positions. Another impetus is that many museums are stalling or even losing ground in their efforts to attract and retain a more racially diverse workforce. Facing these challenges, museums might want to rip down the paper ceiling to widen the pool of potential applicants, increase the diversity of their workforce, and contribute to an equitable society.

Other job sectors are already “dropping the degree.” In the past year, major companies including Kellogg's, General Motors, and

Bank of America announced they will stop requiring four-year degrees for a wide variety of positions. **Governments** are trying it, too: in 2023 Virginia became the 30th state to review roles and remove unnecessary degree requirements from thousands of public-sector jobs. As a tool to advance diversity, equity, accessibility, and inclusion (DEAI), degree reform is systemic and potentially sustainable, in contrast to one-and-done approaches that rely on diversity training seminars or job fairs.

In museums, the degree in question might be a B.A. or B.S., but for some positions it might be a master's or a Ph.D. Expectations regarding advanced degrees are even more exclusionary than undergraduate degrees, with respect to race and socioeconomic background, and often result in people embarking on museum careers burdened by significant student debt. It's worth remembering that museums' focus on advanced academic credentials is a relatively recent development. The ranks of successful, prominent directors without advanced credentials include Julianna Force, who began as a personal secretary and rose to become founding director of the Whitney Museum of Art in New York City in 1930; J. Carter Brown, who held an M.B.A. when he became director of the National Gallery of Art in Washington, DC; and Ron Chew, who did not have a bachelor's degree when he became executive director of Seattle's Wing Luke Asian Museum in 1991.

Four-Year Degree Requirements Automatically Screen Out:



If Not Degrees, Then What?

Degrees are often used as proxies for criteria that wouldn't withstand scrutiny. It's well documented that, left to their own devices, people tend to hire applicants they feel comfortable with, people who share their background, interests, experience, and cultural references. That very human tendency is directly at odds with museums' desire to recruit and retain staff who reflect the racial and cultural diversity of their communities. Weaning an organization from over-reliance on credentialing starts with managers taking a hard look at the skills a job really needs. If a position requires time management and social and communications skills, for example, what other ways might applicants demonstrate these abilities?

Some employers are replacing degree-based hiring with "skills-based hiring," assessing applicants' practical knowledge, experience, and demonstrated skills and competencies. These approaches come with their own drawbacks. Some employers have implemented "challenge-based hiring"—requiring applicants to brainstorm ideas, solve a problem, or write an essay. This

imposes a time burden on applicants, and in some cases asks them to donate material of real value (whether or not they get the job). Degrees are binary—an applicant does or doesn't have one. (Granted, degrees from some institutions may be more prestigious than others, but that's a whole other bundle of bias.) Knowledge and experience are more nuanced and harder to assess. How can museums create systems for reviewing applications that are fair and equitable but also don't eat unreasonable amounts of staff time?

Once a museum has recruited a more diverse workforce, managers face another set of challenges: ensuring these new staff members want to stay. Employers may need to provide training in hard or soft skills and examine the organizational culture to ensure it is welcoming for new hires who don't share the background, norms, and experiences represented in the dominant institutional culture.

It may not be a simple solution, or a magic fix, but examining when they might want to drop the degree for particular roles could be a healthy first step for museums to take on the road to effective, fair, and equitable hiring.



Digital Twins and Doom Loops

A brief guide to terms that may be popping up in your news feeds.



Digital twin
of an oil rig.



Digital twins: digital models of objects, systems, or processes (e.g., buildings, machines, distribution systems) that exist or could exist in the real world. These interactive models use real or fictional data input to visualize, simulate, or predict how their real-world

counterparts will respond to various situations and conditions. For example, [Shanghai](#) has commissioned a digital twin of the whole city that will use data from satellites, drones, and sensors to model 100,000 elements, including waste disposal, traffic, and the potential

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An empty Market Street in San Francisco, California, in April 2022.

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effects of natural disasters. The [Neurotwin](#) project is creating personalized digital twins of individual human brains to predict the effects of using electromagnets to treat Alzheimer's disease. [The Natural History Museum](#) in London feeds data, from

thousands of sensors that measure everything from temperature and humidity to vibration and light, into a digital model that helps staff reduce energy use, identify threats to collections, and prioritize repairs and improvements.

Doom loops: a negative feedback cycle in which the damaging effects of a disruption spark a downward spiral that is difficult to reverse. Currently, much attention is being given to **urban doom loops** sparked by the pandemic, when remote work emptied office buildings and prompted many people to relocate to

areas with lower costs of living. The resulting lower foot traffic, job loss due to small business closures, and disinvestment in city services resulting from lower tax revenues led to an increase in homelessness and crime, making it less likely that people and businesses will return to former urban cores. Researchers warn that a **climate doom loop** may result from the fact that climate disasters (extreme heat, storms, floods, fires) are diverting money and attention from the efforts needed to curb emissions and reform the systems fueling the climate crisis.



Combating the Loneliness Crisis

In 2019, the temporary Torro Loneliness Museum opened in Beijing to help people “accept and cast aside their loneliness.”



In May 2023, Dr. Vivek Murthy released *Our Epidemic of Loneliness and Isolation: The U.S. Surgeon General's Advisory on the Healing Effects of Social Connection and Community*. Such advisories are issued to address “significant health challenges that require the nation’s immediate awareness and action.” The first, in 1964, tackled smoking and tobacco use. Subsequent advisories covered preventing and decreasing overweight and obesity (2001) and using naloxone to prevent opioid overdoses (2022). In this latest report, Murthy calls on the US to make the same investments in addressing social connection that we have made in combating tobacco use, obesity, and the addiction crisis.

What is the extent of this crisis?

About a third of US adults 45 and older suffer from loneliness; that figure rises to nearly 80 percent in young adults 18 to 24. The incidence of loneliness is particularly high among vulnerable older adults, including immigrants; lesbian, gay, bisexual, and transgender populations; minorities; and victims of elder abuse. Economists estimate that loneliness costs the [US economy](#) \$406 billion a year due to lost work days and adds an estimated \$6.7 billion a year to [Medicare costs](#) for socially isolated older adults.

Why is loneliness a significant health challenge?

Research shows that [loneliness](#)

[and isolation](#) are linked to sleep problems, inflammation, and immune changes in younger adults. In older people, they’re tied to symptoms such as pain, insomnia, depression, anxiety, and shorter life span. In people of all ages, they are associated with higher risks of heart disease, stroke, diabetes, addiction, suicide, self-harm, and dementia.

What are some root causes of this epidemic?

More Americans are living alone. According to [US Census](#) data, the number of one-person households soared from 8 percent in 1940 to an estimated 29 percent in 2022. Now roughly 13 percent of American adults live alone, from 4 percent of adults 18–24 to 26 percent of those 65 and older.

The decline of organized religion. Churches have traditionally been a critical “third place” where people socialize and connect with their community, but participation in organized religion is at an all-time low, with roughly 3 in 10 adults now [religiously unaffiliated](#). Sixty-eight percent of adults report attending religious services a few times a year or less.

The rise of social media. [Teens](#) spend an average of 4.8 hours a day on social media. While these platforms were initially hailed as a great connector, they have [demonstrably contributed](#) to the mental health crisis among young people by fostering unrealistic expectations regarding appearance and facilitating cyberbullying.

What can museums do?

The surgeon general’s report makes the following recommendations for how cultural organizations can help combat this epidemic:

- Create opportunities and spaces for inclusive social connection and establish programs that foster positive and safe relationships.
- Embed social connection in internal policies, practices, programs, and evaluations.
- Actively seek and build partnerships with other community institutions...to create a culture of connection in the broader community.
- Advance public education and awareness efforts to introduce and elevate the topic in programs and exhibits.
- Create and provide education, resources, and support programs for community members and key populations: community-wide social events, volunteering, network-building, and professional development.
- Foster a culture of connection in the broader community by highlighting examples of healthy social connection and leading by example.



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