INSIDE

The Pew Charitable Trusts

Trust

To Grow a Better Future

From conserving the boreal forest to protecting consumers, 2018 was rooted in accomplishments meant to last.

Winter 2019 | Vol. 21, No. 1

TIME CAPSULE

In 1949, one of Pew's founders, J.N. Pew Jr., suggested that the organization invest in the future of historically black colleges and universities. Two years later, he hired a fellow Cornell University alumnus, Jerome H. Holland—the first African-American to play on the school's football team and later a college president—as an adviser. During his tenure, Holland visited numerous college campuses and developed a program that supported African-American institutions of higher learning.

Delaware State University

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Cover photograph: Getty Images

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The Pew Charitable Trusts is a public charity driven by the power of knowledge to solve today's most challenging problems. Working with partners and donors, Pew conducts fact-based research and rigorous analysis to improve public policy, inform the public, and invigorate civic life.

Pew is the sole beneficiary of seven individual charitable funds established between 1948 and 1979 by two sons and two daughters of Sun Oil Co. founder Joseph N. Pew and his wife, Mary Anderson Pew.

Inspired by the Power of Knowledge

Benjamin Franklin was far ahead of his time. In 1758, he published one of the earliest American books on personal finance, *The Way to Wealth*. And while it is filled with sage advice about saving, frugality, and time management, Franklin also points out that "An investment in knowledge pays the best interest."

This simple maxim has long guided The Pew Charitable Trusts in our use of facts and data to learn, innovate, and create long-lasting and positive change. While our portfolio of work changes over time, we remain inspired by the power of knowledge to find evidence-based solutions and serve the public interest.

In 2018, Pew's research, advocacy, and technical assistance—combined with the experience and wisdom of our partners and donors—led to measurable accomplishments across a wide range of issues. They include working in Ohio to help pass the Fairness in Lending Act, a model for financial reform in other states where payday lending is allowed. We collaborated with scientists and fishermen to develop new fishing gear to catch swordfish along the California coast—a victory for whales, sea turtles, and other marine life that had been caught up by gillnets and discarded. In our hometown, the School District of Philadelphia—acting on findings from Pew's Philadelphia research initiative that low-income students enrolled in the city's high-performing special admissions high schools in smaller numbers—adopted new policies to improve outreach to those students. And the Pew Research Center's data-driven analyses continued to illuminate important global trends, such as its finding that sub-Saharan Africa had the largest increase in the world of people displaced from their homes due to conflict and unrest. You will learn more about these and other accomplishments in our annual review, featured in this issue of *Trust*.

The center also released an enlightening series of reports about how people approach information and determine what is true when some social media platforms, bots, and phony websites are used to spread falsehoods. One report examined the public's ambivalent attitude about facts. It determined that only 38 percent of American adults have a strong interest in seeking out reliable information about the news and the self-assurance to find trustworthy sources, while 49 percent are relatively disengaged, unenthused, and wary about seeking facts. And a separate survey of some of the world's leading technologists, scholars, and social media practitioners found them nearly evenly split over whether new trusted methods will emerge to block lies and misinformation online in the mobile, 24/7 information environment that is now an inescapable part of modern-day life.

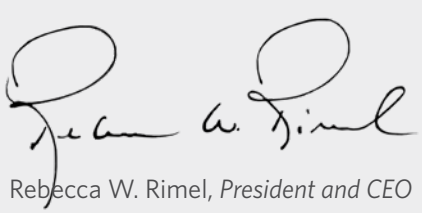
"An investment in knowledge pays the best interest."

These reports show that many Americans pursue information in varied ways and are often skeptical about facts. Nevertheless, Pew remains committed to rigorous, nonpartisan research—not simply to prove that facts exist and can be differentiated from falsehoods, but also because data, evidence, and science are indispensable to an informed citizenry and a thriving democracy. You can read more about these findings in this issue.

For artists, insight is often found through observation, intuition, and personal experience, which they express in imaginative works that shed new light on humanity. The Pew Fellowships in the Arts have long recognized and encouraged the Philadelphia region's most talented artists. Along with financial support, the program provides advice on communications, fundraising, and promotion that helps artists succeed. To date 350 fellows have deepened their talent for painting, dance, music, writing, and other creative endeavors, providing unique perspectives that illuminate our past, our

present, and our common future. You'll find out more about the Pew fellowships—and meet some of these artists—in this issue.

Some wisdom is timeless. When Benjamin Franklin urged his readers to seek out knowledge more than two and a half centuries ago, he did so long before personal computers, GPS satellites, the internet, and so many other inventions that have revolutionized the way we learn, communicate, and make the decisions that guide our lives. But he understood that the greatest return on investment will always come from knowledge, whether we arrive at it through reason, experience, investigation, or observation. That lesson has sown the fertile ground in which our accomplishments last year—and every year—take root.



Rebecca W. Rimel, *President and CEO*

Trust

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THE BIG PICTURE

Local surf champ Dede Suryana rides a wave laden with plastic bags, noodle wrappers, and other trash in South Java, Indonesia, in 2013. The murky surf was photographed after a storm in a remote area located some 15 hours by car from Jakarta. Plastic packaging and single-use items account for 61 percent of litter scattered across beaches worldwide, with debris found in every ocean, including the waters off remote islands, the two poles, and even the deep sea floor. In 2017, factories produced a cumulative 8.3 billion metric tons of new plastic—only 9 percent of that amount has ever been recycled. Up to 13 million metric tons of plastic enter the ocean each year; equivalent to a garbage truck emptying trash into the sea every minute. Pew is working with governments, industry, scientists, and nongovernmental organizations to better understand this global problem, and help find solutions aimed at reducing the amount of plastic entering the ocean.

Zak Noyle/A-Frame

An expansive 100-year-old red brick waterfront building at the San Francisco Maritime National Historical Park has a new role. The former warehouse and cannery is now a boutique hotel, thanks to an innovative National Park Service leasing program. *argonauthotel.com*

Innovative Partnerships Help National Parks Fund Repairs

BY ANNE USHER

For years, a large 19th-century house in Pennsylvania's Valley Forge National Historical Park stood empty, with cracked and chipped paint, a leaking roof, and ivy growing through its walls.

In 2005, a local Montessori school board asked the National Park Service (NPS) about leasing the home and its surrounding 3.5 acres to house a new school. The school wanted to take advantage of NPS' historic leasing program, which rents park properties to private businesses in exchange for their upkeep and repair. In return for a favorable 40-year lease, the board spent more than $4 million to refurbish the property. Five years later, the Montessori Children's House of Valley Forge opened its doors to preschoolers, with the freshly painted home now a library and parent meeting room and the accompanying barn—once full of aging wood stalls—transformed into six brightly lit classrooms.

The school is just one example of how the historic leasing program is leveraging partnerships with organizations and private companies to help address a maintenance backlog in the National Park System that's estimated at $11.6 billion. Since 2015, The Pew Charitable Trusts has worked to raise awareness about these needed repairs and help implement long-term solutions to address the challenge. Much of this deferred maintenance is for roads, trails, and other infrastructure, but nearly half is for historic sites, including more than 6,600 buildings. Repairs range from resealing windows and doors to extensive overhauls, such as replacing heating systems and resolving structural issues. In exchange for the restorative work, NPS has lowered or eliminated rental costs for some of these properties and

provides leasing partners some latitude over how they can be used.

The most inventive may be a brewery, the first one allowed in a national park.

In 2013, businesswoman Rose Schweikhart signed a lease that allowed her to transform one of Hot Springs National Park's ornate public bathhouses into Superior Bathhouse Brewery. For decades, a lack of maintenance funds had kept all but one of the park's bathhouses, located in Arkansas, closed to visitors. NPS split the repair costs with Schweikhart: The park installed fire alarms and roof repairs and undertook stabilization work, while she spent close to $1 million to overhaul the interior.

"It costs a lot to maintain these buildings," Schweikhart says. She credits NPS for preserving the building and is thankful that she could put her own spin on it to "give a building a whole new purpose."

The brewery is the only one in the world to craft beer using hot springs—in this case, the 144-degree local water. But it's also providing something more valuable than beer: revenue for the local community.

A 100-year-old warehouse fronting the waterfront at the San Francisco Maritime National Historical Park has been similarly given a new lease on life. The brick building, located between Fisherman's Wharf and the Ghirardelli Chocolate Co., once served as the Del Monte Cannery—the world's largest fruit and vegetable factory at the time. More recently, NPS had used it to store nautical gear.

In August 2003, the historic building took on a new identity: the Argonaut Hotel. As with the brewery and school, the hotel's owners agreed to address the building's deferred maintenance. Part of the building now houses a 10,000-square-foot visitor center with exhibits on the area's seafaring history and an auditorium for educational events.

As with the other partnerships, the lease is not only reopening the doors of a nationally significant property, it's also removing maintenance from park service balance sheets.

These partnerships, and others across the National Park System, were made possible by passage of the Historic Preservation Act in 1966, which has allowed NPS to preserve historic buildings through cooperative agreements with private or nonprofit partners. While modest in size, this program was instrumental in developing 160 leases in more than 340 buildings and generating more than $9.3 million in fiscal year 2017.

Pew advocates for consistent and reliable funding for needed repairs at park sites, and it recognizes historic leases as another tool to help achieve this goal. Marcia Argust, director of Pew's restore America's parks initiative, says, "These leases are helping to address NPS' repair backlog—and restore buildings of national importance."

Latest Findings on Dental Pain and Opioid Use

Prescriptions to alleviate dental pain continue to play a part in the nation's opioid epidemic.

While dentists have written a declining portion of all opioid prescriptions in recent years, two recent studies in *The Journal of the American Dental Association* highlight the need for caution.

One, which assessed prescribing patterns of dentists caring for patients with private insurance, found that the rate of opioid prescriptions per 1,000 patients rose from 131 to 147 from 2010 to 2015. The largest increase (nearly two-thirds) was for 11- to 18-year-olds.

For all age groups, nearly one-third of the opioid prescriptions written by dentists were for nonsurgical visits. The researchers suggested that dentists could prescribe non-opioid pain relief in more of these instances.

Another study in the journal looked at Medicaid dental patients who sought outpatient care and found that from 2013 to 2015, almost a quarter of them filled an opioid prescription. Emergency department health care providers were much more likely to prescribe opioids to patients with dental conditions; 38 percent of patients who received care in an emergency department filled an opioid prescription, compared with 11 percent who went to the dentist. The data suggested that emergency health care practitioners and dentists diagnose oral health problems differently, which can lead to unnecessary opioid use.

"These studies underscore opportunities to reduce inappropriate prescribing of opioids while still ensuring that patients have access to effective pain management," says Jane Koppelman, who directs research for Pew's dental campaign. She notes that a 2016 statement from the American Dental Association (ADA) on the use of opioids in treatment recommends that dentists prescribe nonsteroidal anti-inflammatory analgesics as the first-line therapy for acute pain.

More recently, the ADA released an interim policy that supports mandatory continuing education for dentists on prescribing opioids. The policy also backs statutory limits on opioid dosage and the length of time for prescriptions—no more than seven days—which are consistent with Centers for Disease Control and Prevention guidelines. The interim policy also calls for dentists to take advantage of state prescription drug monitoring programs, which can help inform prescribing decisions and stem the misuse of prescription opioids.
—Daniel LeDuc

‘New Age’ Beliefs Common Among Americans

Most American adults self-identify as Christians, but many of them also have what are sometimes characterized as “New Age” beliefs—including a belief in reincarnation, astrology, psychics, and the presence of spiritual energy in physical objects like mountains or trees. Many religiously unaffiliated Americans hold these beliefs as well, according to an analysis released by the Pew Research Center in October.

Overall, roughly 6 in 10 American adults accept at least one New Age belief. Specifically, 4 in 10 believe in psychics and that spiritual energy can be found in physical objects, while somewhat smaller shares believe in reincarnation (33 percent) and astrology (29 percent).

“New Age beliefs are not necessarily replacing traditional religious beliefs or practices,” says Claire Gecewicz, a research analyst at the center. “While 8 in 10 Christians say they believe in God as described in the Bible, 6 in 10 believe in one or more of the four New Age beliefs analyzed in the findings, ranging from 47 percent of evangelical Protestants to roughly 7 in 10 Catholics and Protestants in the historically black tradition.”

Moreover, religiously unaffiliated Americans (those who describe themselves as atheist, agnostic, or “nothing in particular”) are about as likely as Christians to hold New Age beliefs. However, atheists are much less likely to believe in any of the four New Age beliefs than agnostics and those who describe their religion as “nothing in particular.” Just 22 percent of atheists believe in at least one of four New Age beliefs, compared with 56 percent of agnostics and 8 in 10 of those whose religion is “nothing in particular.”

Americans who consider themselves to be spiritual but not religious also tend to accept at least one New Age belief. Roughly three-quarters of U.S. adults in this category hold one or more of these beliefs, including 6 in 10 who believe spiritual energy can be located in physical things and 54 percent who believe in psychics. And among those who say they are religious and spiritual, 65 percent espouse at least one New Age belief.

Americans who reject both the religious and spiritual labels also are more likely to reject New Age beliefs. Roughly 3 in 10 or fewer in this group believe in psychics, reincarnation, astrology, or that spiritual energy can be found in objects. And less than half (45 percent) affirm one or more of these beliefs.

—Demetra Aposporos

60% of Christians and Religiously Unaffiliated Hold at Last One New Age Belief

	Believe spiritual energy can be located in physical things	Believe in psychics	Believe in reincarnation	Believe in astrology	NET Believe in at least one
All U.S. adults	42%	41%	33%	29%	**62%**
Christian	37	40	29	26	**61**
Protestant	32	38	26	24	**57**
Evangelical	24	33	19	18	**47**
Mainline	43	44	33	30	**67**
Historically black	41	43	38	34	**72**
Catholic	47	46	36	33	**70**
Unaffiliated	47	40	38	32	**62**
Atheist	13	10	7	3	**22**
Agnostic	40	31	28	18	**56**
Nothing in particular	61	52	51	47	**78**

Source: Pew Research Center

A woman gazes out at the Center City skyline of Philadelphia, where 17% of residents have earned some credits towards a college degree but have not yet completed one. *Getty Images*

Who's Not Finishing College in Philadelphia?

Seventeen percent of Philadelphians age 25 or older—about 176,000 people—have earned some credits toward an associate or bachelor's degree but have not attained either one.

That's according to an analysis from Pew's Philadelphia research initiative, which also found that nearly three-quarters of city residents who haven't finished college—about 127,000—are at least 35 years old, based on U.S. Census Bureau estimates from 2016. Thirty-nine percent live in households with children under the age of 18, and 70 percent of those with jobs work 40 hours a week or more.

Age, parental responsibilities, and full-time work are among the factors that make it difficult to find time for classes, according to research from the Advisory Committee on Student Financial Assistance. And the National Center for Education Statistics reports that college noncompleters nationwide borrow more on a per-credit basis than do those who graduate within six years.

In addition, Philadelphians with some college credits but no degree are disproportionately black and female compared with the city's overall population. About 8 percent are veterans. And while the percentage of residents who haven't completed college is about the same as in other major cities, Philadelphia has the greatest proportion of adults who have never attended college—49 percent—among the 15 largest U.S. cities.

"Philadelphia has a low percentage of adults with higher education degrees—34 percent, compared with 53 percent in Boston and 60 percent in Washington. And that's often cited as an important factor in explaining the city's lackluster economic performance over the past several decades," says Larry Eichel, who directs the research initiative. "Reducing the ranks of the noncompleters could help address that."

In Philadelphia, noncompleters fare better, in terms of both employment and household income, than residents who have never attended college but not as well as residents with a college degree.

Sixty-seven percent of Philadelphians ages 25-64 with some college credit but no degree are employed, according to the census. That percentage is lower than for residents with a bachelor's degree or higher (83 percent) or with an associate degree (76 percent) but higher than for those with a high school diploma or less (52 percent).

In terms of income, 18 percent of college noncompleters live in households with annual incomes of $100,000 or more. The comparable percentages are 23 percent for those with associate degrees, 42 percent for people with bachelor's degrees or more, and only 11 percent for those with high school educations or less schooling.

—Daniel LeDuc

A YEAR OF WORKING TOGETHER

From spurring expanded dental care for those in need to conserving ocean life through promotion of new fishing methods, Pew worked with a variety of organizations in 2018 to improve public policy, inform the public, and invigorate civic life.

Steve Weinik/Mural Arts Philadelphia

PHILADELPHIA

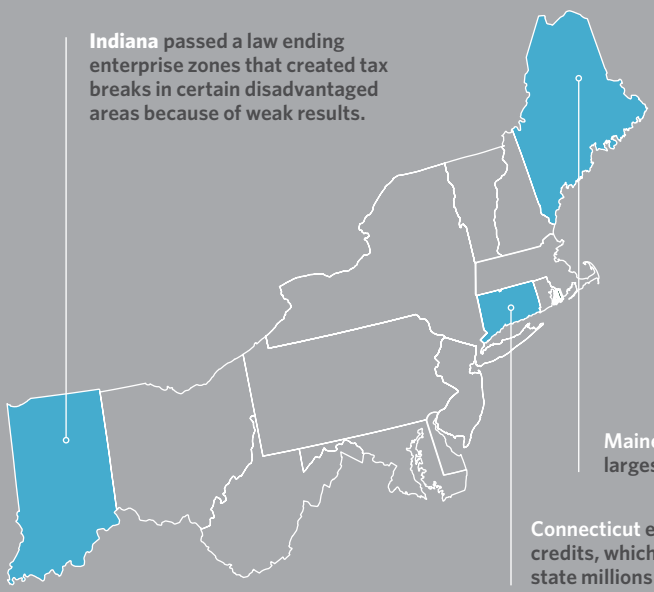
ARTS

Spurred by its initial success in Philadelphia, the public art and history project "Monument Lab" went national in 2018. A new program is supporting fellowships around the country to encourage creative approaches to public art, history, and memory. These efforts are a follow-up to the original Pew Center for Arts & Heritage-supported "Monument Lab" that fostered public dialogue about the role of monuments in contemporary society through such Philadelphia exhibits in 2017 as artist Mel Chin's "Two Me" at City Hall (previous page) and Duane Linklater's "In Perpetuity," which focused on the plight of Indigenous peoples from lands that now include the city of Philadelphia. *Steve Weinik/Mural Arts Philadelphia*

The School District of Philadelphia in October took action on 16 steps to address equitable access to special and citywide admission high schools in response to a 2017 report from Pew's Philadelphia research initiative. Among other findings, the report said the makeup of incoming students in 2015-16 at the city's special admissions schools, including some of the system's highest-performing institutions, differed from the ninth grade as a whole with fewer Latinos, students receiving federal poverty aid, boys, and African-Americans. The school system's response placed particular emphasis on outreach to these students and school leaders also said they would continue to examine other report findings, including why some students get admitted to the schools but end up not attending. *Lexey Swall/GRAIN*

SCHOOLS

STATES' FISCAL HEALTH



Indiana passed a law ending enterprise zones that created tax breaks in certain disadvantaged areas because of weak results.

Maine approved major reforms to three of the state's largest economic development tax incentives programs.

Connecticut eliminated three tax credits, which is expected to save the state millions of dollars in coming years.

States spend billions of dollars offering tax credits and exemptions to encourage businesses to create or keep jobs. Pew has worked with lawmakers in many states to help them evaluate these economic development incentives to determine if they're effective and achieving measurable results. In 2018, three states Pew assisted made changes in programs they found weren't delivering a strong return on taxpayers' investments.

PAYDAY LOANS

Ohioans will now have access to affordable small loans, thanks to the bipartisan Fairness in Lending Act. Passed by the state Legislature and signed by Governor John Kasich (R) in July, the law transforms how payday loans work and is expected to save borrowers—who often rely on the loans for rent, groceries, and utilities—$75 million a year. Pew provided research and technical assistance to lawmakers that helped achieve three fundamental goals for consumers: affordable payments, lower prices, and a reasonable time to repay. The law makes Ohio's payday loans some of the safest and lowest-cost in the nation—and is a model for other states that permit payday lending.

California decided in September to phase out use of large-mesh drift gillnets to catch swordfish off the West Coast. On average, more than half of marine life caught by drift gillnets is discarded, and the move was an important victory for whales, sea turtles, and other ocean creatures that have been injured and killed by the nets in recent decades. Pew supported the decision and has long worked with scientists and fishermen to develop and use less destructive fishing gear. *Ralph Pace*

IN PARTNERSHIP WITH

The David and Lucile Packard Foundation

MARINE PROTECTION

OCEAN CONSERVATION

Less than 100 miles off the New England coast, the seafloor begins to drop steeply. With Pew's urging, the New England Fishery Management Council voted in January to protect 25,000 square miles of that deep-sea floor from the most destructive kinds of fishing gear, a move that conserves slow-growing corals vital to a diverse ecosystem teeming with marine life. And in June, the Gulf of Mexico Fishery Management Council adopted the first-of-its kind plan to safeguard that region's coral by restricting damaging fishing gear in some areas. Those safeguards mark a major milestone in protecting ancient, fragile coral ecosystems that Pew has sought to conserve because they provide food, shelter, and breeding grounds for wildlife ranging from sharks and crabs to fish such as snapper and grouper.

IN PARTNERSHIP WITH

Remmer Family Foundation

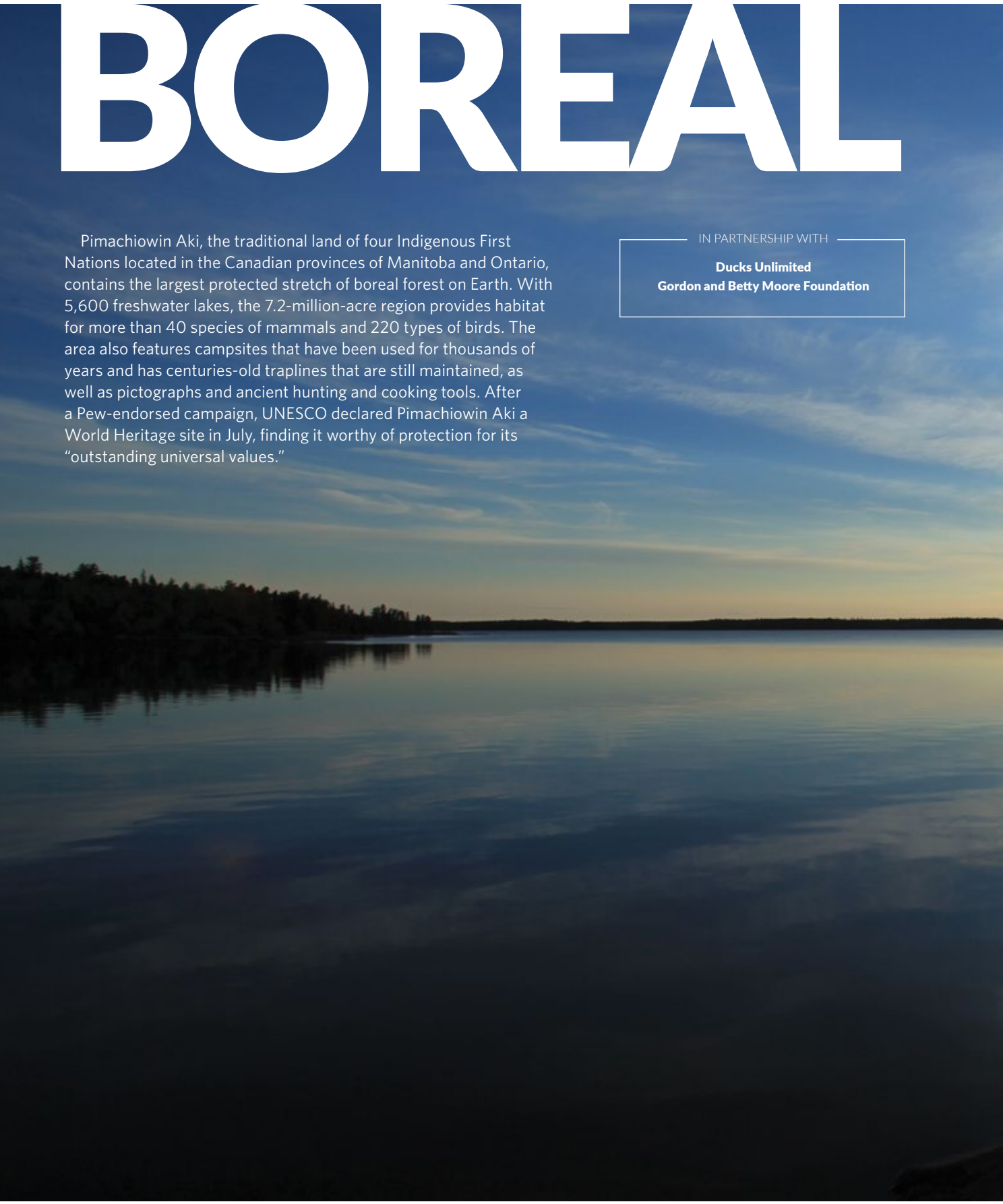
Two squat lobsters sit on *Iridogorgia* coral, a type of octocoral. *National Oceanic and Atmospheric Administration*

BOREAL

Pimachiowin Aki, the traditional land of four Indigenous First Nations located in the Canadian provinces of Manitoba and Ontario, contains the largest protected stretch of boreal forest on Earth. With 5,600 freshwater lakes, the 7.2-million-acre region provides habitat for more than 40 species of mammals and 220 types of birds. The area also features campsites that have been used for thousands of years and has centuries-old traplines that are still maintained, as well as pictographs and ancient hunting and cooking tools. After a Pew-endorsed campaign, UNESCO declared Pimachiowin Aki a World Heritage site in July, finding it worthy of protection for its "outstanding universal values."

IN PARTNERSHIP WITH

Ducks Unlimited
Gordon and Betty Moore Foundation



UNESCO

Some 63 million Americans are hindered in accessing regular dental care. To meet this need, Arizona in May and Michigan in December joined a growing number of states authorizing dental therapists. These providers, similar to nurse practitioners in a medical office, can perform most routine preventive and restorative work, such as filling cavities and placing temporary crowns. Pew provided technical assistance to lawmakers in both states—who now join six others authorizing dental therapists in some capacity.

DENTAL HEALTH

Katye Martens

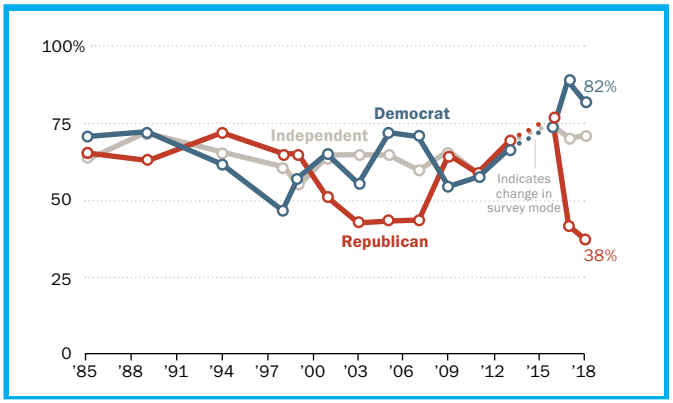
NEWS MEDIA

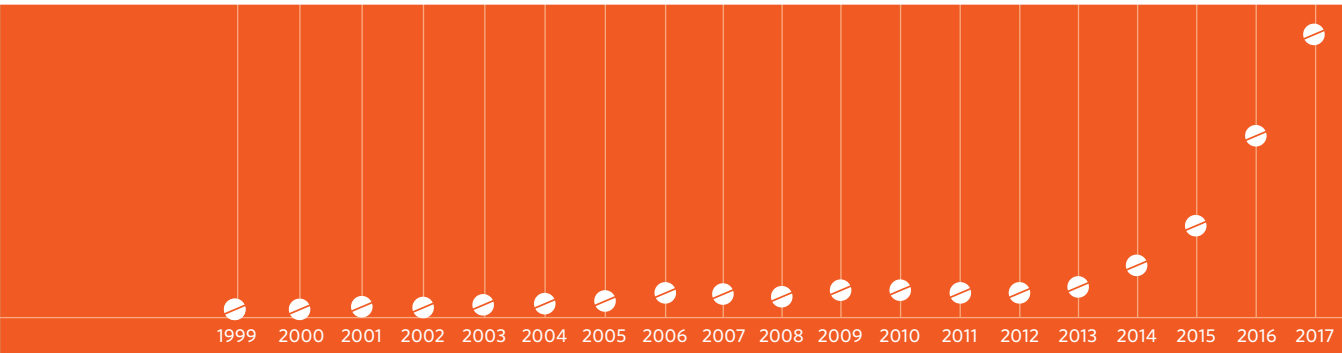
Last year, a vast majority of Democrats—82 percent—said they support the news media's watchdog role, believing that news media criticism "keeps political leaders from doing things that shouldn't be done." But far fewer Republicans—38 percent—felt that way. The 44-percentage-point gap in the new survey, along with the 47-point difference in 2017, are the largest measured by the Pew Research Center in the more than three decades the question has been asked.

IN PARTNERSHIP WITH

The John S. and James L. Knight Foundation
Ford Foundation
Bill & Melinda Gates Foundation
Open Society Foundations

Percentage of U.S. adults who think that criticism from news organizations "keeps political leaders from doing things that shouldn't be done"





Deaths from opioid overdoses have spiked in recent years, rising from some 28,000 in 2014 to more than 47,000 in 2017—federal officials say this now translates to 130 people dying each day. To address the crisis, President Donald Trump in October signed the SUPPORT for Patients and Communities Act. Pew, which supported provisions in the law that increase evidence-based treatment for opioid use disorder, has a broad campaign that includes providing technical assistance to help states expand access to treatment and reduce overdose deaths.

OPIOID EPIDEMIC

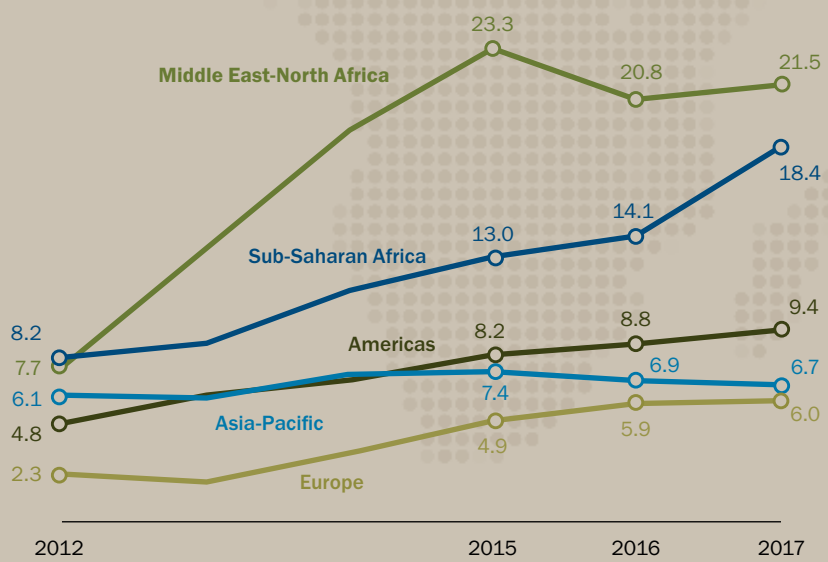
IN PARTNERSHIP WITH

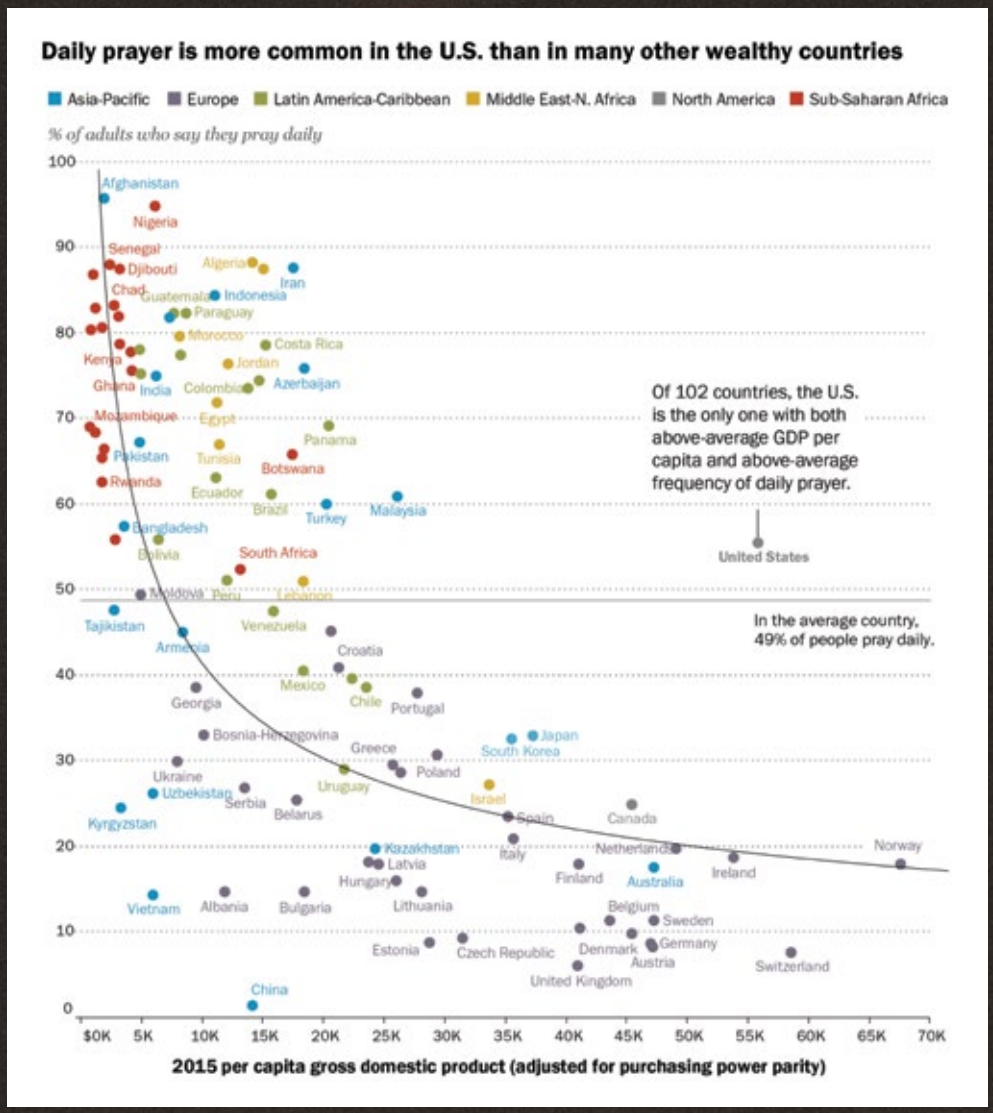
Robert Wood Johnson Foundation
Open Society Foundations

SUB-SAHARAN AFRICA

The Pew Research Center last year determined that the total number of people living in sub-Saharan Africa who were forced to leave their homes due to conflict had reached a new high of 18.4 million in 2017, up sharply from 14.1 million in 2016—marking the largest regional increase of forcibly displaced people in the world.

Number of persons displaced due to conflict, in millions, living in...





IN PARTNERSHIP WITH

John Templeton Foundation

The Pew Research Center has asked adults in more than 100 countries about their religious practices. The surveys show that countries with higher levels of wealth typically have lower levels of religious commitment (such as rates of prayer), and vice versa. In every country surveyed by the center with a gross domestic product of $30,000 per capita or more, fewer than 40 percent of adults say they pray every day, with one exception: the United States. On this measure, the United States (where 55 percent of adults pray daily) is a major outlier; of 102 countries studied, it is the only one with higher-than-average levels of both prayer and wealth.

PRAYER

Joaquinne Dela Cruz/Getty Images

The Future Of Truth

How can Americans tell the difference between facts and misinformation in the digital age?

By Peter Perl

In a country riven by intense political polarization, who can we trust to help us get dependable answers to vital questions that are central to our civic life?

Ultimately–in a digital world besieged by "fake news," "alternative truths," doctored videos, phony websites, powerful algorithms, Russian trolls, and relentless bots–what is the future of truth?

The future of truth? It's a big question, perhaps the central one of our world circa 2019. The Pew Research Center's internet and technology project has set out to try to answer it by exploring questions about online knowledge, opinion, trust, and, yes, truth that are fundamental to the future of democracy.

These issues stand at the forefront of a national discussion at a time when many people either scrutinize news and information sources for signs of bias or dismiss entirely the notion that there are any believable sources at all. When dictionary.com chooses "misinformation" as its word of the year, as it did for 2018, and the Oxford Dictionaries chooses "post-truth" as the word of the year, as it did in 2016, sorting out how the internet and its users will be able to determine fact from fiction has never been more timely.

"The people who created the internet, particularly the popular commercial internet, had nothing but good hopes that it would be a net benefit to society in almost every possible way," says Lee Rainie, who directs the center's internet and technology research. "Now, we are in a different place. The narrative has shifted dramatically in the last two years, and people are writing pieces asking 'Is the Internet a Failed State?' and 'Is the Internet Going to Kill Us All?'"

Pew and its partner, the Imagining the Internet Center at Elon University in North Carolina, have been studying the likely future impact of digital technology on society for more than 14 years. They've generated more than 30 reports and amassed a database of some 10,000 experts, including some of the world's leading technologists, scholars, social media practitioners, visionaries, and strategic thinkers for a series of "Future of the Internet" reports.

Over the years, in multiple Pew canvassings, many experts have expressed anxiety about the way people's online activities were undermining truth, fomenting distrust, widening social divisions, and jeopardizing society's health and well-being. For its 2017-18 research, the center and Elon asked these same experts whether society would be able to combat the spread of lies and misinformation. "We asked this question," says Rainie, "because it seemed the most urgent issue around the globe."

Specifically, the question was: "In the next 10 years, will trusted methods emerge to block false narratives and allow the most accurate information to prevail in the overall information ecosystem? Or will the quality and veracity of information online deteriorate due to the spread of unreliable, sometimes even dangerous, socially destabilizing ideas?"

The answers were collated in one of the latest in the series of reports, "The Future of Truth and Misinformation Online," which is based primarily on a nonscientific canvassing that drew 1,116 expert

respondents. The replies showed a stark division of opinion: 51 percent of these experts predicted the information environment would not improve, while 49 percent said they believed that it would.

In categorizing the results, the research team identified these broad themes and subthemes:

The 51 percent with a negative outlook for the future believe that bad actors will inevitably thwart efforts to seek truth. According to these respondents, corporate and political interests profit from sensationalism and turmoil that generate viral web traffic, and will continue to use social media to appeal to the baser side of human nature: selfish, tribal, gullible, and greedy information consumers who will believe and buy whatever they are told to. This line of thinking holds that advancing technology will only make things worse, because the human brain is not wired to contend with powerful forces generating unprecedented amounts of information that is then sorted by algorithms and artificial intelligence to bombard readers with so much information—much of it confusing—that they give up on even trying to find the truth.

The 49 percent with an optimistic view for the next decade believe, conversely, that our better human instincts will lead society to come together to fix problems and seek the truth. Lies and misinformation have always polluted public discourse, these respondents say, but smart, dedicated people historically have found ways to isolate those with bad intentions. Technology will help people become more aware and adept at seeking and finding what's real, the argument goes, because the rising speed, reach, and efficiencies of the internet, apps, and social media platforms can be harnessed to better detect and combat falsehoods. Legal and regulatory remedies—already being adopted in Western Europe—could create liability for people who intentionally spread inaccuracies; impose new restrictions on Facebook, Twitter, Google, and other major platforms; and curb the damage done by anonymous and fake purveyors of hate speech and misinformation.

Within this disparity of opinion, the optimists and pessimists agree that this is a watershed moment for grappling with a serious threat to democratic institutions, with one expert calling our era a "nuclear winter of misinformation." They also agree that technology alone cannot unscramble the chaos that it has helped to create. Instead, they believe that the public must act to support quality journalism, and develop, fund, and support the production of objective, accurate information, and that society must elevate "information literacy" to be a primary goal for all levels of education.

Rainie's co-author Janna Anderson, an Elon professor of communications who has helped oversee the "Future of the Internet" reports, says that over the years, many internet experts have passionately described what she characterizes as an existential battle between the uplifting promise of unparalleled human connectivity and the unprecedented ability to mislead and manipulate the public to amass economic and political power. "Many brilliant experts believe there will be no effective solution to the problems of the digital age until people in all realms of influence begin to work together to turn the tide," Anderson says.

A recent report highlighted what's at stake. "The Fate of Online Trust in the Next Decade" explored how the public views facts and trust in a democracy. The researchers again queried their panel of experts, who raised serious questions about the danger to the nation when trust—a social, economic, and political binding agent—is seriously eroded because lies and misinformation have undermined public confidence in the idea that truth is even knowable.

Another report, "How People Approach Facts and Information" (see page 26), based on findings from a nationally representative survey of American adults, revealed a public with markedly ambivalent attitudes about facts. The report grouped the U.S. population into five "information-engagement typologies," depending on their level of interest, engagement, or disengagement with news and information. While 38 percent of adults have relatively strong interest and trust in seeking and finding reliable information, 49 percent fell into groups that are relatively disengaged, unenthused, and wary about even seeking facts.

A key tactic of the new anti-truthers is not so much to get people to believe in false information," Rainie says, "it's to create enough doubt that people will give up trying to find the truth, and distrust the institutions trying to give them the truth."

Compounding these difficulties, much of the U.S. public is not very good at identifying facts, according to a report from the center's journalism and media project, "Distinguishing Between Factual and Opinion Statements in the News." That survey asked more than 5,000 adults to try to identify five factual statements and five opinion statements. While a majority correctly identified at least three of the five statements in each set, that's a result only slightly better than random guesses. Far fewer respondents got all five correct, and roughly a quarter got most or all wrong.

Lessons of history are helpful in putting the current misinformation crisis into context, Rainie says. He uses the example of the 15th century invention of the printing press to illustrate the unintended consequences of revolutionary changes in media and modes of communication. With the invention of movable type, he says, "the 'fake-news' folks of that day sprung to life in a dramatic way. People who practiced folklore and witchcraft and demonology and alchemy all had new ways to promote their stuff, to solicit testimonials, to speak to people in their own language, and they had a field day." It took the advances of the Enlightenment and the scientific revolution to subdue the anti-truth forces over the course of time, he says.

Modern-day techniques to manipulate public opinion are increasingly sophisticated, particularly during breaking-news events when search algorithms and social media platforms enable instantaneous metastasizing of misstatements. Rainie cites the example of the 2017 Las Vegas Strip hotel shooting that killed 58 people and wounded 422. Phony stories and headlines blaming "crisis actors," Democrats, ISIS, and anti-fascist groups were quickly disseminated to millions of users.

"A key tactic of the new anti-truthers is not so much to get people to believe in false information," Rainie says, "it's to create enough doubt that people will give up trying to find the truth, and distrust the institutions trying to give them the truth." He credits Stanford University history of technology professor Robert Proctor with naming the concept: "agnotology" (combining the Greek agnos or "not knowing," with logy, "the science of"), which describes intentionally induced doubt and ignorance, through which people who try to learn more about a subject only become more uncertain and distrustful.

Information dispositions: Five groups of Americans ranging from most to least engaged with information

% of U.S. adults in each group

RELATIVELY ENGAGED WITH INFORMATION	*DEMOGRAPHICS*
22% The Eager & Willing They are active seekers of information with a strong interest in learning. They have the highest interest in news and trust in information sources. They express concerns about their online capabilities, but they are anxious to improve their digital skills and information literacy.	52% of this group is made up of minorities: 31% are Hispanic, 21% are black. Some 38% are white.
16% The Confident They combine a strong interest in information, high levels of trust in information sources, and self-assurance that they can navigate the information landscape themselves. They are very self-reliant as they handle the information flows.	This group is heavily white, very well-educated, and fairly comfortable economically. Some 31% are between the ages of 18 and 29, the highest of any group.
MORE AMBIVALENT ABOUT INFORMATION	
13% The Cautious and Curious They have a strong interest in news and information and a lot of tech access, but they do not have high levels of trust in sources of news and information—particularly national news organizations, financial institutions, and the government. They are twice as likely as all adults to be interested in getting training on digital skills and information literacy. At the same time, they report significant levels of stress over trying new things and have busy lives.	This group mostly mirrors the demographic traits of the general population. It has somewhat lower levels of educational attainment than average.
RELATIVELY WARY OF INFORMATION	
24% The Doubtful They are leery of information sources, particularly local and national news. They also have very busy lives, which could be why they also show lower levels of interest in updating their digital skills or information literacy.	The Doubtful are the most middle-aged of the groups, mainly white, and also relatively well-educated and comfortable economically.
25% The Wary They have the lowest level of trust in information sources. The Wary also have the lowest levels of broadband and smartphone adoption. They declare little interest in upgrading digital skills.	This group is heavily male (59%) and one-third are ages 65 or older.

Other organizations and foundations are exploring the impact of internet misinformation. Among the more ambitious, Rand Corp. undertook in 2017 an ongoing study it calls "Truth Decay: An Initial Exploration of the Diminishing Role of Facts and Analysis in American Public Life." The Rand study said that "truth decay" was nothing new, noting three eras in American history in which economic, political, and psychological factors diverted public discussion from reliance on facts: the Gilded Age of the 1880s and 1890s, the Roaring '20s through the 1930s, and the Vietnam War era of the late 1960s and early 1970s.

But Rand's study concluded that distrust of institutions has become more severe in the current era and that the sharp disagreement on the basic facts important to society has reached an unprecedented level.

Pew's Lee Rainie says that much of the hope of the experts is that society can develop a "cyborg future of truth" in which human-machine combinations take advantage of artificial intelligence mechanisms to expose fake news, combat doubtmongers, and restore public confidence in facts. But, he notes, technology alone can't solve the problem. "One thing the experts also urge is teaching a new set of literacies," Rainie says, "that is anchored in being good, smart, technologically enabled citizens."

The News Literacy Project, a nonpartisan, independent nonprofit that teaches middle and high school students how to know what to believe in the digital age, is a step in that direction. The project has seen explosive growth in the past two years, doubling its staff to 18 and its budget to $3.6 million, thanks to funders who share the organization's sense of urgency, says Alan Miller, a Pulitzer Prize-winning former *Los Angeles Times* reporter who founded the project in 2006.

The group created a virtual classroom it calls Checkology with a broad digital curriculum led by journalist-educators who teach students the importance of the First Amendment and how to distinguish between news, opinion, advertising, propaganda, and falsehood. In just two years, 16,000 teachers have used Checkology with more than 115,000 students in every state and overseas, Miller says, and assessment data show the vast majority of students report becoming more interested in news, more skeptical, more confident in their judgments, and more eager to become civically involved and vote. *Fast Company* magazine called the effort "one of the most important educational tools of our time."

Miller sees hope in an increasing number of school districts and states that are restoring mandates to teach civics and are creating new programs in media literacy. "We're no panacea," he says, "but we're hopeful about the potential to combat what is the equivalent of a public health epidemic; misinformation is damaging democracy and is dangerous to the health of its citizens."

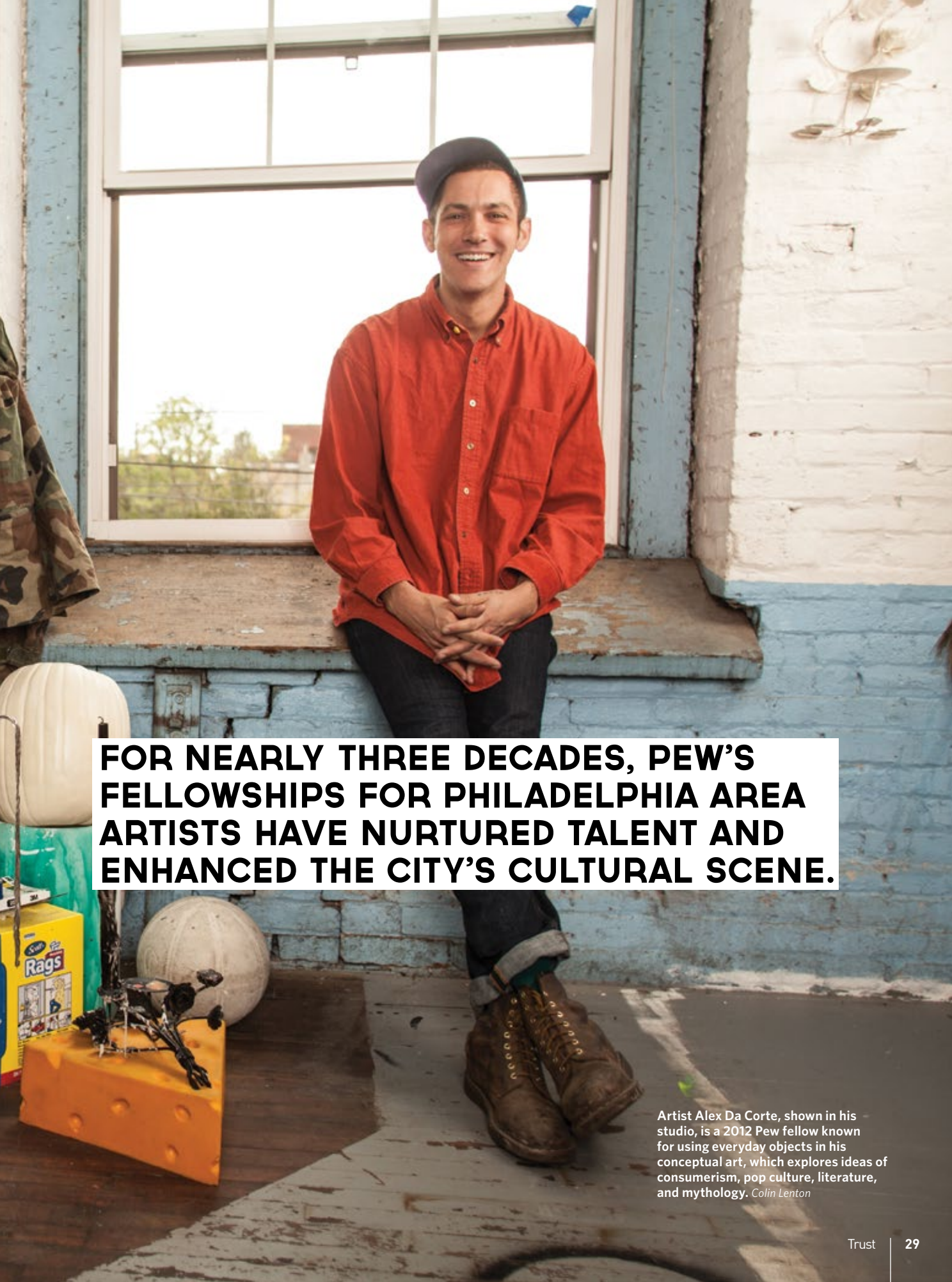
As efforts like the News Literacy Project expand their missions, the Pew Research Center will continue to study the future of truth in the digital era. With even the top experts so sharply divided on whether truth will survive and be discernable, the coming years will be a critical time for information in this information age.

"For some people, there is some comfort to be had in the 50-50 verdict of the experts because it means the story is still unfolding," Rainie says. "And to these experts that means that with proper attention now and elevated conversations, we may be able to shape the future in a way that facts remain knowable—and respected."

Peter Perl spent more than three decades as a reporter and editor at The Washington Post.

A WELLSPRING FOR CREATIVITY

BY TOM INFIELD



FOR NEARLY THREE DECADES, PEW'S FELLOWSHIPS FOR PHILADELPHIA AREA ARTISTS HAVE NURTURED TALENT AND ENHANCED THE CITY'S CULTURAL SCENE.

Artist Alex Da Corte, shown in his studio, is a 2012 Pew fellow known for using everyday objects in his conceptual art, which explores ideas of consumerism, pop culture, literature, and mythology. *Colin Lenton*

The "Lightning" installation from Da Corte's expansive "Free Roses" exhibition incorporates a riot of vibrant colors as well as sculptures, paintings, and videos that touch on popular culture, the work of other artists, and personal narratives.
John Bernardo, courtesy of the artist and Luxembourg & Dayan

Alex Da Corte had to earn a living, so he was painting houses, not just canvases, back in 2011 when he opened his mail one day and learned that he had been nominated for a Pew Fellowship in the Arts.

He was well aware of the fellowships, which are awarded each year to 12 artists in the Philadelphia region and currently come with $75,000 in no-strings-attached support for their work. But he didn't know that he had been anonymously nominated—and, in his words, was completely "blown away."

Since its inception in 1992, the fellowships program has helped to enhance Philadelphia's cultural life by allowing 350 people—among them 130 visual artists, 43 poets, 39 composers, 26 filmmakers, and 26 choreographers—to lay aside financial constraints for a period of time and deeply explore their talent, vision, and ambition. Many have gone on to international acclaim, earning 30 Guggenheim fellowships, three MacArthur fellowships, two Pulitzer prizes, two Rome prizes, two Grammy awards, and three Philadelphia poet laureate appointments.

"As someone who grew up in the Philadelphia art scene, I felt it was something to aspire to," Da Corte says. "I had worked previously for an artist who had won the Pew fellowship. I had always admired the artists who had been awarded the fellowship. So getting nominated really meant a lot to me."

Da Corte's art defies easy categorization—he paints, sculpts, and creates video. By his account, his work is "dreamlike," "nonsensical," and "changing at every turn." Often, it is lighted in neon color. Sometimes, projects take up whole rooms.

And his fellowship came at the perfect time in his career. During the Great Recession that followed the 2008 financial crisis, the market for commercial art almost collapsed, and he says he just about gave up trying to sell his work.

"I was running a small business that did Venetian plaster work. I was doing that as my main source of income and working for my brother painting houses. And, in between, I was just occasionally making work for art shows."

But the recession also freed him creatively. He focused less on being commercially appealing and gave free rein to his imagination. "The art I was making was completely abject, covered with soda and shampoo and dripping—and," he acknowledges, "weird." But it was also breathtaking for its individuality, and people began to notice.

The fellowships program relies on anonymous nominators—Philadelphia-based professionals with deep knowledge of artistic practices—to scout the regional art scene for candidates, and someone put forward Da Corte.

Like other nominees, he then completed an application that was reviewed by two local evaluators in his field on his artistic excellence, his commitment to his art, and the potential for a fellowship to affect subsequent creative work and professional advancement. A panel of art experts from around the country—whose identities, like the evaluators, are public—makes the final fellowship decisions. Da Corte was awarded $60,000 (the fellowships have since increased to $75,000 disbursed over two to three years). "It totally changed my life," says Da Corte, a 2012 fellow. "About two years after that, I ceased operating my company and handed it over to my partner, and just kept doing art stuff as my whole source of income."

He has gone on to exhibit in solo shows in England, Germany, Austria, Denmark, and the Netherlands, as well as in Philadelphia, New York, and Los Angeles. "It has all transpired since the fellowship," Da Corte says. "The fellowship really put some fuel in my tank."

And "that's the goal of the program," says Paula Marincola, executive director of the Pew Center for Arts & Heritage, to "raise the bar for artistic excellence in Philadelphia.

"We see the fellowships program as serving the arts in the same way research-and-development funding does for the sciences. It can lead to advances that might not be possible otherwise," she says.

"Artists don't necessarily make a lot of money, and there aren't a lot of opportunities for them to just be focused on their work. The fellowships buy them time to concentrate on their art." And, she notes, it's one of the nation's longest-running programs in providing direct support to artists.

By supporting artists, the fellowships also help the Philadelphia region's reputation. In the past decade the city's cost of living, which is far less than other creative meccas like New York, has attracted artists; the fellowships offer one more step of financial independence. "Philadelphia is increasingly a vibrant place for artists to work and live," says Melissa Franklin, director of the fellowships, and the program has "raised the visibility of the arts community in Philadelphia and allowed artists to take on more ambitious projects and go deeper into their practices."

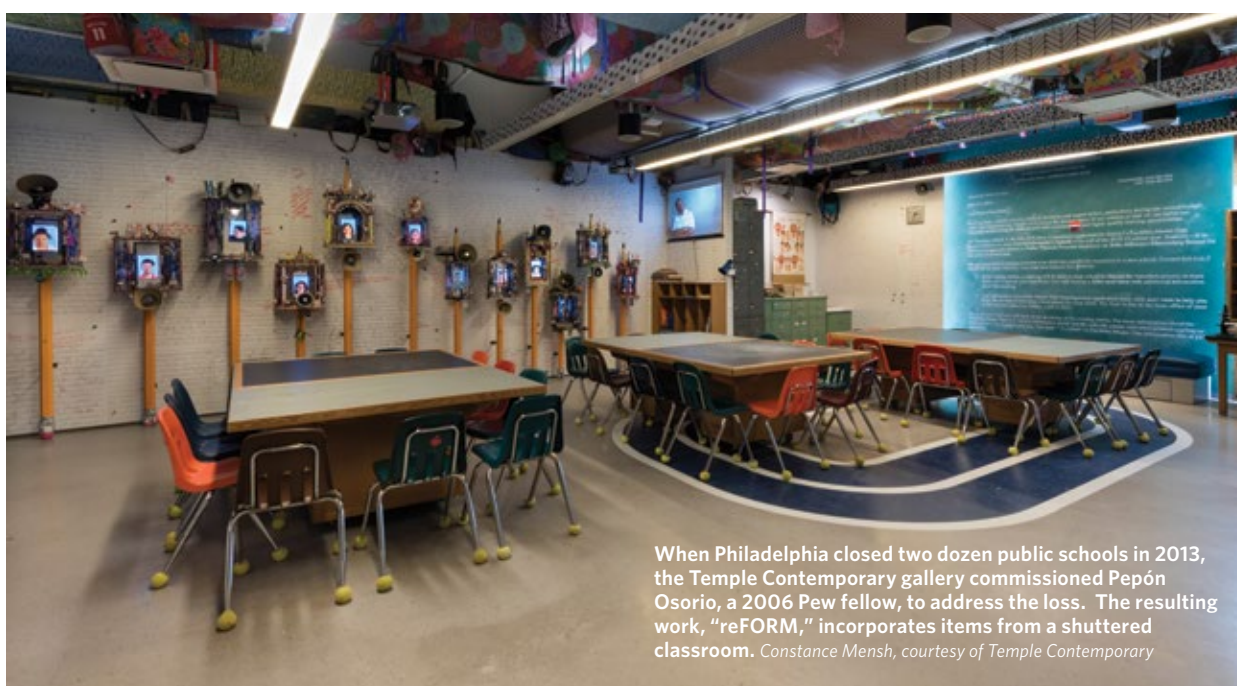
The artists themselves see it. Through its selection of fellows, the Pew Center for Arts & Heritage, over time, has subtly "opened up" Philadelphia's art community to new visions and approaches, says Pepón Osorio, a 2006 fellow.

Pew has aided the career paths of artists working outside of traditional bounds who otherwise might not get by financially since they are not producing art for the commercial market, he says.

Osorio, a visual artist who teaches at the Tyler School of Art at Temple University, moved to Philadelphia from New York in 1999. He is engaged in social practice, a relatively new term for art that is community-focused. He eschews museums and galleries, preferring to put his large-scale installations in social settings.

"There is a lot of great work being done in art institutions, but we cannot neglect that there is a serious, wonderful, and exciting development happening outside of those institutions," Osorio says. "And I think Pew is creating leverage between those places."

On a practical level, the fellowships also provide



When Philadelphia closed two dozen public schools in 2013, the Temple Contemporary gallery commissioned Pepón Osorio, a 2006 Pew fellow, to address the loss. The resulting work, "reFORM," incorporates items from a shuttered classroom. *Constance Mensh, courtesy of Temple Contemporary*

specific counseling to help artists succeed, such as advice on finances, communications, fund-raising, and promotion. The Pew center also helps fellows enroll at prestigious artist residency centers, such as the MacDowell Colony in New Hampshire, where they spend days alone with their work and nights in conversation with other artists.

Fellows have been as young as 25; on the other end of the spectrum, jazz bassist Jymie Merritt, who played with bebop legends of the 1950s, was almost 90 and still creating music when he was named a fellow in 2016. But the focus is always forward, Marincola explains. Fellowships are not an award for past performance, but instead are intended to encourage artistic growth and new and better work from those showing great potential. Musician and composer Matthew Levy, a 2016 fellow who teaches at Temple University and leads an all-saxophone chamber ensemble called PRISM Quartet, says fellowships fit best for artists "at a breakthrough point in their careers."

"They have gotten to a certain place of excellence, but their best work may lie ahead of them," Levy says. "The encouragement and support and generosity of Pew ignites a whole new body of work and a whole new level of ambition. I know that was the case for me."

The fellowship enabled Levy to buy new saxophones and upgrade the sound equipment in his studio. Perhaps as importantly, he says, it gave him and his quartet the financial freedom to pick their own musical projects.

"It has enabled us to self-direct projects instead of relying on external commissions or external employers," he says, "so we can pursue our own ambitions."

Poet Yolanda Wisher, a 2015 fellow, says the rigorous application process itself had value for her because it expanded her vision of the artist she could become.

"They're asking you for your potential as an artist, not just what you've accomplished," she says. "It makes you really have to think about your practice into the future."

The hard thinking so transformed her view of herself that she quit her job as director of art education for the Philadelphia mural arts program before hearing whether she had won a fellowship.

When the announcement came, she says, "I considered it a blessing from the universe," a confirmation that "I would be okay without a 9-to-5 job and that my writing could provide for me."

She performs a blend of poetry and song with her band, The Afroeaters, and is curator of spoken word at Philadelphia Contemporary, a nonprofit arts organization. She leads workshops and has curated

events at the Philadelphia Museum of Art and elsewhere.

A year after the fellowship, she was named poet laureate of Philadelphia.

"All the good stuff in my poetry career, or most of it, happened after the fellowship," Wisher says. "I remember hearing that it was kind of an indication of future success. For me, it became prophetic."

For Sarah McEneaney, a 1993 recipient, the fellowship gave her what she most wanted: time to go into her studio, close the door, and work, work, work.

"I am a painter, but I make drawings, I make prints, and every once in a while I make sculpture," she says. "My day job was carpentry. So having that cushion of money and time enabled me to work."

The Pew fellowship marked the first time that she received high-level recognition, and it opened other doors for her.

"I was 38 and had been a practicing artist ever since I finished studying at the Pennsylvania Academy of the Fine Arts. I had been making art and showing my work in Philadelphia since 1979. I had applied for a lot of grants, but I had never gotten any."

Pew's faith in her meant nearly as much as the money, she says. "Getting that kind of honor snowballs, and good things tend to follow."

Today, McEneaney continues living and working in a neighborhood of lower North Philadelphia that she has depicted many times in rooftop-view paintings. She has regular solo exhibitions in Philadelphia and New York, and has participated in several artist-in-residency programs and fellowships around the country. Her work hangs in the Philadelphia Museum of Art and Rhode Island School of Design, and in the galleries at her alma mater, the Pennsylvania Academy.

She says that one of the nicest benefits of getting a Pew fellowship has been the chance to get to know other artists. Even though so much of their creative work is done alone, fellows become a community, with periodic opportunities to come together. She has befriended artists outside her field and "expanded my community to the literary world, not just the visual art world."

And that's part of the goal, too, says Marincola. The Pew Center for Arts & Heritage provides grants supporting art institutions and art projects in Philadelphia. But the fellowships also help create a community of artists and empower these producers of art. As Marincola likes to say, "artists are the foundation."

"No artists," she adds, "no art."

Tom Infield is a longtime Philadelphia journalist and frequent contributor to Trust.

Teens and Their Cellphones: How Much Is Too Much?

About half of teenagers say they spend too much time on their phones—and an even greater percentage of parents say they're concerned about their teens' screen time.

BY DEMETRA APOSPOROS

Across the country, parents and their children have a running battle over when it's time to put the cellphones away. "I don't feel like I'm getting the same level of engagement when he's on the phone for an extended period of time," Melinda Rozsalyi, a mother in the Washington suburbs, says of her 14-year-old son, Adam. "I feel like it impairs his way of thinking, his mood—just about everything. And it creates anxiety and maybe frustration when I ask him to give up the phone for whatever reason, like he's not able to stay away from it." Adam, of course, disagrees. "I really don't think I spend too much time on my phone," he says—but he adds that he's not sure how he would fill his days if he didn't have a phone.

A Pew Research Center report seems to tilt in Mom's direction. The report, "How Teens and Parents Navigate Screen Time and Device Distractions," presented findings from two recent surveys: one of U.S. teens and another of parents of teens. The survey of teens found that 72 percent say they often or sometimes check their phones as soon as they wake up, and 45 percent are online on a near constant basis. What's more, a portion of the youth say that when they aren't online, they often worry about what they might be missing.

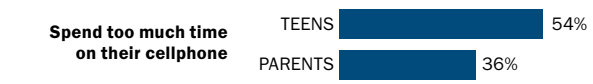
And to Rozsalyi's point, the report, released in August, asked teens to weigh in on five emotions they might feel when separated from their phones. "Anxious" was mentioned by 42 percent, ranking it highest on the list. "Lonely" and "upset" were mentioned by 25 and 24 percent of the teens, respectively, while just 17 percent said they felt "happy" or "relieved." Adam, meanwhile, explains that he finds it easier to give up the phone on some days than others. During summers spent with extended family in Hungary, for example—where he'd rather be outdoors exploring, riding his bike, or hiking in the forest—he's on his phone much less. "In Hungary, I only use the phone when it's too hot to go outside," he says.

Jingjing Jiang, a research analyst at the center, says that teens' own perceptions of their use was one of the more noteworthy aspects of the survey. "We found that roughly half of teens worried that they spend too much time on their cellphones, with some 52 percent reporting they've taken steps to cut back on their cellphone use," Jiang says. "Slightly more have also tried to limit their use of social media or games."

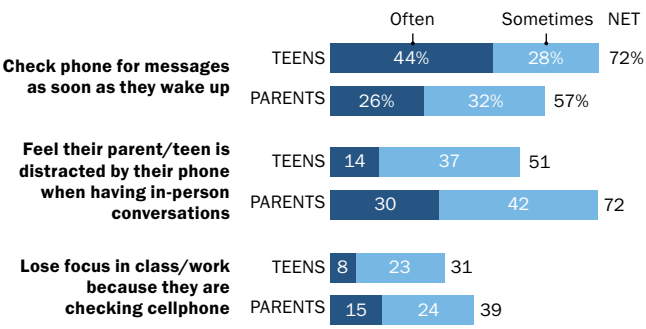
In a separate survey, the center queried parents of teens on a number of related topics and found that 72 percent said their teens were sometimes distracted by their phones when the parents tried to converse with them, 65 percent said they worried that their teens spent too much time in front of screens, and more than half—57 percent—said they limit when and how often their teens can go online or use their cellphones.

Parents and Teens Report Varying Levels of Attachment, Distraction Due to Their Cellphones

Percentage of U.S. teens/parents who say they...



Percentage of U.S. teens/parents who say they...



Source: Pew Research Center

Melinda Rozsalyi watches her son Adam on his cellphone. She feels the device can make it hard for him to focus on his homework and chores, and a Pew survey finds that many parents would agree: 72 percent think their teens are sometimes distracted by cellphones.
Lexey Swall for The Pew Charitable Trusts

Those findings track with public statements from some Silicon Valley executives—people who have made their fortunes creating innovative online technology—who now feel the need to limit their own children's time spent on screens.

But not every parent feels compelled to limit phone use. "I know parents that have very strict screen time, but our approach has been a little more laid back and focused on safe use," says Mila Becker, a parent of two teenage girls in the Washington suburbs. "And I think our approach has worked, because the kids aren't obsessed with the phone."

She points out that although her kids spend a fair amount of time on their devices, the smart technology can have a number of beneficial uses. Sophie, Becker's 17-year-old daughter, is a relatively new driver who uses an iPhone feature to disable notifications whenever she's behind the wheel.

"The app somehow knows when I'm driving," Sophie explains, "so anyone texting me gets a message," which reads: "I'm driving with Do Not Disturb While Driving turned on. I'll see your message when I get where I'm going." She also voluntarily sets a timer on her phone at night that turns off notifications—and the distracting dings from incoming messages—from 10:30 p.m. until 7 a.m.

For parents who worry that too much screen time could harm their kids' face-to-face experience, a separate Pew Research Center analysis based on the same survey offers further insight. The study finds that teens who are online almost constantly are just as likely as their less-connected peers to say they regularly socialize with their friends in person outside school.

Kids aren't the only ones who find they need to navigate the diversions created by the omnipresence of cellphones. The center's survey of parents revealed that 36 percent of them think they spend too much time on their cellphones, and 15 percent say they often lose focus at work because they're distracted by their phones. The teens who were surveyed agreed that their parents are not immune to the lure of the screen: 51 percent say they often or sometimes find parents or caregivers to be distracted by cellphones when they try to engage them in conversation.

All these concerns about excessive screen time have prompted major technology companies, including Google and Apple, to launch products in recent months that limit screen time each day to help both adults and teens manage their online usage.

Although it remains to be seen how well these products will be received, the center's Jiang notes that their arrival couldn't be timelier. "As teens look at their own lives and those of their peers," she says, "roughly 9 in 10 view spending too much time online as a problem facing people their age, with 60 percent calling it a major problem."

Demetra Aposporos is senior editor of Trust.

Key to Healthy Fisheries May Lie in Viewing Them From the Bottom Up

Florida scientist studies small prey to better understand broader marine food webs

BY HOLLY BINNS

Brittany Troast always feels small when she stands beside the ocean.

That's because she sees the world as interconnected, a place where each individual—from the tiniest organisms to humans—are small but important parts of vast ecosystems. And that's why the University of Central Florida student is beginning a research project to analyze predator-prey relationships.

Troast, who is pursuing a master's degree in biology, wants to better understand how changing populations of small prey fish—also known as forage fish—affect the abundance and diversity of large predatory fish. She will examine more than two decades of data to determine fluctuations in populations throughout the Indian River Lagoon system in east-central Florida and in estuaries of the St. John's River near Jacksonville.

Troast hopes the information she gathers will help fishery leaders make big-picture decisions and manage ecosystems as a whole rather than focusing on only individual species.

"We can manage the system from the bottom up instead of putting a Band-Aid on one species at a time," says Troast, 26. "Sometimes the solution is not just to limit the catch of a declining sport-fish population, but also improve the abundance of its prey."

Troast's project is part of the Forage Fish Research Program, which has awarded its second year of fellowships to students who study prey species. The program is run by the Florida Forage Fish Coalition, which is led by the International Game Fish Association and includes Pew, the Florida Wildlife Federation, and the Snook and Gamefish Foundation. The coalition is collaborating with leading academics and scientists from the Florida Fish and Wildlife Research Institute to increase knowledge about forage fish.

During Troast's study, she'll analyze data about forage fish such as pilchards, anchovies, and pinfish, which are important prey for larger sport fish such as red drum, tarpon, and snook. She will also try to figure out why forage fish are plentiful in some years and less so in others.

The native Floridian's love of nature and fish blossomed during childhood visits to the Sunshine State's beaches, springs, and rivers. Her parents instilled in her an appreciation for the natural world that fed Troast's curiosity about how the actions of one animal affect others.

"We can manage the system from the bottom up instead of putting a Band-Aid on one species at a time."

"A lot of people think humans have control over everything, but the oceans and our natural systems are bigger than us," says Troast, who also has a bachelor's degree in marine science from the University of Florida. "Everything we do has a ripple effect. It goes back to understanding that everything is connected. There is a way for people to respect the planet but also enjoy it, and we have to figure out how to do this sustainably."

Holly Binns directs Pew's efforts to protect ocean life in the Gulf of Mexico, the U.S. South Atlantic Ocean, and the U.S. Caribbean.

Brittany Troast holds a gray snapper *(Lutjanus griseus)* in one of east-central Florida's lagoons before measuring the fish to gather information on predator-prey relationships. *Brittany Troast*

Stateline, an initiative of The Pew Charitable Trusts, is a team of veteran journalists who report and analyze trends in state policy with a focus on fiscal and economic issues, health care, demographics, and the business of government. More stories are available at pewtrusts.org/stateline.

Movement Motivator: A Playground on a Truck Brings Joy, Fights Obesity

Kids at the Dufrocq School in Baton Rouge, Louisiana, compete in a sack race using equipment trucked in by the local parks and recreation commission's playground on wheels. *Recreation and Park Commission for the Parish of East Baton Rouge*

BY CHRISTINE VESTAL

In a state with the fourth-highest rate of youth obesity in the nation, the Baton Rouge, Louisiana, parks and recreation agency wanted to lure kids away from their screens and into the parks to get moving.

But the low-income youths who needed exercise the most weren't showing up at the parks because, officials learned, they didn't have transportation, and their parents were too busy working to take them. So they decided to take the parks to the kids.

With money donated in 2012 by corporate sponsors and a portion of its parish budget, the local parks and recreation agency, known as the Baton Rouge Recreation, or BREC, bought a box delivery truck, painted it with bright colors and filled it with scooters, hula-hoops, balls, slack lines, trampolines, sidewalk chalk, and jump ropes.

"The idea came to us one day while we were watching a bunch of kids turn flips on an old mattress someone had discarded near the office," said Diane Drake, who directs BREC's playground on wheels. "We realized it wouldn't take much to get kids moving if we put it right in front of them."

Naming the mobile playground BREC on the Geaux (a Cajun play on words for go), the parks and

recreation agency in 2013 started what would become a daily program by holding community events at housing complexes, churches, parks, and schools in low-income neighborhoods.

If peals of laughter and swarms of activity are any indicator, BREC on the Geaux was an immediate success, Drake said. "Once word spread, children would come running out of their apartments as soon as we pulled into the parking lot. It was all we could do to unload the equipment before they grabbed it and ran off."

A year after it began, BREC officials drove the mobile playground to Charlotte, North Carolina, to share their story with others at a 2014 meeting of the National Recreation and Park Association.

Since then, BREC has received dozens of emails and phone calls from other cities seeking advice on how to start a similar program, Drake said. Recreation officials in Knoxville, Tennessee, told Stateline in an interview that they plan to start a copy of BREC's program next year.

Other imitators include Waynesville, North Carolina; Greenville, South Carolina; Mount Pleasant, Michigan; and Alexandria, Louisiana.

Transporting the joy and the health benefits of play to kids in underserved neighborhoods isn't a new idea. A concept called "Play Streets," in which local volunteers work with police and health officials in urban neighborhoods to temporarily block traffic so kids can play, has been thriving for decades in places like London, Chicago, New York, and San Francisco.

But the idea is only now starting to take root in small and medium-sized cities—and in a handful of rural towns—where it turns out that low-income children and adults are even more prone to obesity than in the nation's urban centers, according to a June report from the U.S. Centers for Disease Control and Prevention.

Baton Rouge was not the first city to launch a mobile playground. "We stole the truck idea from Rochester, New York," Drake said, having researched other cities after their initial idea. "But our concept was different because it was designed to combat obesity."

Rochester's "Recreation on the Move" program offers homework help, read-aloud programs, art, and music, in addition to some sports and group games.

The oldest known mobile playground started in Sioux Falls, South Dakota, more than 70 years ago, and it's still operating, Drake said. "They temporarily repurposed vehicles used to transport seniors one summer and the rest is history."

In Winter Park, Florida, a decommissioned firetruck was converted to a playground on wheels in 2012. And in 1997, East Point, Georgia, started using an old police SWAT truck to take play equipment to a basketball park for kids whose parents couldn't afford to send them to summer camp, Drake said.

Budget friendly

BREC started its mobile playground project with $110,000, half from the Blue Cross and Blue Shield of Louisiana Foundation and half from the parish budget.

That paid for the truck, play equipment, and staff and sustained the project for two years, with funds left over. In the third year, the agency bought a second truck and hired more staff with new funding from Blue Cross and other donors.

A Play Streets project funded by the Robert Wood Johnson Foundation supported play events in four diverse low-income rural communities last summer—Warrenton, North Carolina; Talihina, Oklahoma; Oakland, Maryland; and Cameron, Texas—on a much smaller budget: $6,000 for a handful of community events.

Instead of shutting down a street, the communities held the events in parks, fields, and other public spaces.

The oldest known mobile playground started in Sioux Falls, South Dakota, more than 70 years ago, and it's still operating.

Working with a local health department, an agricultural extension service, a church, and a tribal health center from the various towns, Robert Wood Johnson researchers found that the Play Streets concept could be cost-effectively adapted for rural communities, said Keshia Pollack Porter, a health policy professor at Johns Hopkins University who worked on the project.

In addition to providing needed community interaction as rural residents traveled to town centers for the events, bouncy houses and other inflatable play equipment inspired kids and some adults to get moving. Strapping pedometers on kids who volunteered, researchers showed that physical activity among participating children was higher during the three- to five-hour events than it otherwise would have been.

In Baton Rouge, Louisiana State University's Pennington Biomedical Research Center found that similar events sponsored by BREC resulted in kids getting about 50 percent more physical activity, as measured in FitBit steps, compared with weekdays and weekends without Play Street events.

Play Streets don't solve all the problems, said Jaimie Bussel said Jamie Bussel, a pediatric health expert at the Robert Wood Johnson Foundation. But combined with food and nutrition initiatives, and institutionalized by communities, including schools, day care centers, and recreation departments, they can go a long way to tamping the nation's obesity epidemic, she said.

Play deserts

Just this week, a report from a Department of Health and Human Services committee published in *JAMA* noted that 80 percent of U.S. adults and adolescents are not active enough, and recommended that children and adolescents aged 6 through 17 do an hour or more of moderate-to-vigorous physical activity each day.

Nationwide, the childhood obesity rate was nearly 16 percent in 2016-2017, CDC data shows. And obese children are more likely to continue to be obese as adults, which puts them at a higher risk of developing heart disease, type 2 diabetes, cancer, and other conditions.

Children in East Baton Rouge pose with sporting equipment delivered during a weeks-long flood in 2016. The gear, delivered by the local park commission, provided the kids with some much-needed playtime. *Recreation and Park Commission for the Parish of East Baton Rouge*

In addition, children with obesity are at a higher risk of developing chronic health conditions such as asthma, diabetes, sleep apnea, and bone and joint problems. They're also more likely to be bullied and have depression, low self-esteem, or social isolation, CDC data shows.

States vary widely in the rate of obesity among youths ages 10 to 17, according to the most recent National Survey of Children's Health. Eight of the 10 states with the highest rates are in the South. Nine of the 10 states with the lowest rates are in the Northeast and West.

Mississippi has the highest rate at 26 percent and Utah has the lowest rate at 9 percent. The obesity rate in Louisiana is 19 percent.

One of the causes attributed to increased obesity in poor urban neighborhoods is a lack of affordable fresh food, sometimes called a "food desert." But researchers say that many food deserts are also play deserts, where low-income children lack safe, stimulating outdoor play spaces.

In many low-income neighborhoods, parks are plentiful but tend to be poorly maintained and lack amenities such as up-to-date play equipment. They also might be in areas that are unsafe for children to walk to on their own, said Johns Hopkins' Porter.

The Elm Grove community in Baton Rouge is one of them, Drake said. That's why BREC on the Geaux parks there once a week to set up shop. "You can see the kids peeking out of their windows and doors as we pull up," she said. "When they see our truck, they start running."

Dee Taylor calls herself the grandmother and great-grandmother of Elm Grove, a subsidized apartment complex in Baton Rouge. "We didn't have much of anything for the kids on the grounds.

"They stayed in their apartments and watched too much TV or played video games all day in the summer," she said. "It was the only thing they knew to do."

"So, when I heard about BREC on the Geaux, I made a call and they came." Taylor put up a notice about the mobile playground's schedule in the window of her apartment and another one on the door of the building's management office. She told everyone she knew.

"A child needs that kind of physical activity to grow up in a wholesome way," she said. "The more we can give them, the better their lives will be."

BREC's two play trucks visit dozens of housing complexes, elementary schools, and parks in Baton Rouge every week. They show up at community gatherings on the weekend. During the Louisiana floods of 2016, BREC's trucks made the rounds at local shelters, giving children a much-needed daily play break.

BREC on the Geaux had more than 100,000 participants in 2016, adults and children. "We may have been the hardest-working mobile play unit in the business," Drake said. But since then, BREC was short on funds and had to curtail its schedule slightly. Based on demand, the program should be expanding, Drake said.

At Elm Grove, Taylor said she and her children wish BREC on the Geaux could visit more often. But she said she knows other neighborhoods need it too.

Christine Vestal is a staff writer for Stateline.

‘Defining the Universe’ Is Essential When Writing About Survey Data

BY JOHN GRAMLICH

The answer to almost any survey question depends on who you ask.

At the Pew Research Center, we conduct surveys in the United States and dozens of other countries on topics ranging from politics and religion to science and technology. Given the wide range of people we speak to for our polls—and the many issues we ask them about—it’s important to be as clear as possible in our writing about exactly *who* says *what*.

In research circles, this practice is sometimes called “defining the universe”—that is, clearly identifying the population whose attitudes we’re studying, whether those people are police officers in the U.S., Christians in Western Europe, or some other specific group. This kind of clarification can go a long way toward ensuring that readers interpret survey results correctly.

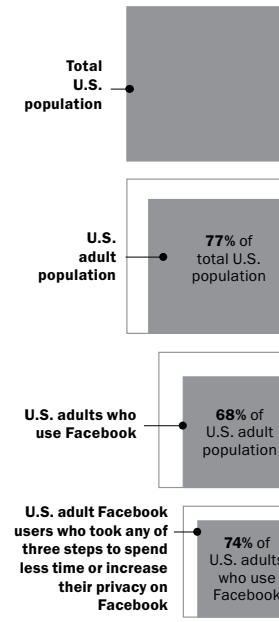
In many cases, the universe of survey respondents we’re talking about is relatively straightforward. If we say that nearly two-thirds of U.S. adults think the national economic situation is good, we’re referring to the views of Americans ages 18 and older. But in other cases, additional clarification and context may be needed, particularly for readers who aren’t schooled in the art of interpreting poll results.

Consider one of our recent survey findings about Facebook users. The survey found that 74 percent of adult Facebook users in the U.S. have taken at least one of the following three steps in the past 12 months: adjusted their privacy settings, taken a break from checking the platform for several weeks or more, or deleted the app from their phone.

But there are some caveats to bear in mind when considering this finding. First, not all U.S. adults use Facebook. Pew Research Center’s most recent estimate is that 68 percent of American adults use the platform. In other words, it’s *not* accurate to say that 74 percent *of all U.S. adults* have adjusted their Facebook privacy settings, taken a break from the platform, or deleted the app from their phone in the past 12 months. It *is* accurate to say that 74 percent of *U.S. adults who currently use Facebook*—that is, 74 percent of that 68 percent—have taken one of these three steps in the past year.

It’s also crucial to remember that this finding only refers to adult Facebook users in one country. Worldwide, Facebook claims more than 2 billion monthly active users, and our survey did not include respondents from countries outside the U.S. It also doesn’t reflect U.S. Facebook users who are younger than 18—a substantial population.

Another example of a survey universe that’s not always easily understood concerns U.S. politics. The center and other polling organizations frequently conduct polls to find out Americans’ views on political topics. But these views can vary depending on whether the universe of interest is all U.S. adults, registered voters, or—in some cases—an even more narrowly defined group, likely voters.



Only about two-thirds of adults are registered to vote, and these adults tend to be more politically engaged than those who are not registered. That can translate into differences in attitudes.

Some polling organizations also report on the subset of the public they deem *likely* to vote, particularly for surveys conducted in the run-up to an election. This determination is complicated, but might be made by asking respondents questions about their voting behavior and intentions, or by using people’s past records of voting, among other things.

Since different polling organizations use different definitions of the term “likely voters,” it’s important to understand who is and isn’t included in the definition being used.

Survey data can be tricky for nonexperts to follow. It can be confusing for some readers to understand why 51 percent may not represent a “majority,” or how a survey of 1,000 people can tell you what an entire country thinks. One way to help readers interpret the many poll findings they encounter is to be as clear as possible about the group of people whose answers are being described.

John Gramlich is a writer and editor at the Pew Research Center.

Science-Based Accord to Protect Arctic Ocean

Delegations from nine nations and the European Union signed an agreement on Oct. 3 that prevents unregulated fishing in the high seas of the Central Arctic Ocean for at least 16 years unless science-based measures are established. The accord, which Pew supported, is the first proactive ecosystem-based approach to conservation in the Arctic Ocean. Steve Ganey, senior director of Pew's land and seas program, spoke with former U.S. ambassador for oceans and fisheries David Balton, who led the negotiations that produced the agreement.


Leiff Josefsen

The Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean is a landmark step in marine conservation. Can you explain what it does and why it matters?

The agreement embodies two basic commitments by nine nations and the European Union. The first is not to authorize their vessels to engage in commercial fishing in the high seas of the Arctic Ocean until there is enough scientific information with which to manage those fisheries properly. The agreement covers 2.8 million square kilometers, an area roughly the size of the Mediterranean Sea. And while there never has been commercial fishing in this area, the melting of the Arctic ice cap has opened a part of this area to potential fishing for the first time. So that's a major commitment.

The second commitment is to establish and operate a Joint Program of Scientific Research and Monitoring ... to determine when commercial fishing might be viable and how best to manage such a fishery in the future.

An important part of the agreement is that it's not just countries within the Arctic region that signed. Why did this diverse group of countries—from inside and outside the region—feel that this agreement was necessary?

As is often the case with international agreements, the underlying interests of the various players were not identical. For the five nations that border this high seas area—the United States, Canada, Greenland/Denmark, Norway, and Russia—a principal interest was to ensure that no high seas fishing would undermine the security of natural resources under their jurisdiction.

And for the countries outside the Arctic region, I think they are looking into the future and anticipating that there will someday, at least potentially, be a commercial fishery. By signing on to this agreement now, it guarantees them a seat at the table when a new agreement may be negotiated that could authorize commercial fishing on a sustainable basis.

I'd add one other thing: For some of the non-Arctic States, particularly the three Asian States and the European Union, they welcomed the opportunity to participate in an international agreement about the Arctic on an equal footing with Arctic countries. The other Arctic-specific agreements that have been negotiated to date have excluded them. This one included them.

For many of us, the Arctic seems like a faraway place, but it's a very special region. Can you describe why it's unique and why this area deserves protection?

The Arctic is special because it is warming faster than probably any other part of the planet, more than twice as fast as the global average. And this is bringing about profound change.

The fisheries agreement is, of course, driven by this underlying change. But there are other changes afoot that already are causing serious problems for the people who live and work in the Arctic. The Arctic region is fascinating for a lot of reasons, but I would say the primary reason that it is receiving so much attention has to do with climate change.

This agreement asked that the commercial fishing industry wait for 16 years before starting to fish. What do you expect will happen during that time span?

I would first note that the 16-year period will begin only once the agreement enters into force, and that may actually take a little while. And another clarification is that that 16-year period can be extended in five-year increments, if the parties so agree. What

will happen in the interim, primarily, is the establishment and operation of this Joint Program of Scientific Research and Monitoring. That's the mission during this period.

What do you consider the most important things to get right in coordinating the science over the next 16 years?

There are a lot of things that we do need to get right. One reality is that there are limited resources for scientific research, generally, in the Arctic. And some of these governments, including the United States, have a difficult time in their own capitals putting aside or reserving money for Arctic fisheries research. There are other compelling needs. Particularly from a fishery science point of view, a lot of these governments, perhaps reasonably, may prefer to spend money studying ocean areas where there are already active fisheries.

Nevertheless, creating this joint program and housing it under the agreement will allow scientists from each of these countries to make a stronger case to fulfill the commitment to create and operate this program for the Arctic. So that's one of the things to get right: making sure there are enough resources and attention devoted to doing the marine science work necessary to fulfill this commitment.

How much do you think countries are willing to invest to ensure that the necessary scientific research is conducted and followed?

In my experience, the signing and bringing into force of such an agreement helps to propel such investment forward. It focuses government's attention at a higher level. And usually that means more resources will actually flow.

You've been around a lot of fishery negotiations over your career. How important are agreements like this? And how well do they work over the long term?

These deals are a little bit like snowflakes: No two are exactly alike. And this one is not typical. This is an agreement not to fish … in an area where there never has been commercial fishing. It's unusual in that way. And so it's a little difficult to predict, even based on the precedents, how effective it will be.

Nevertheless, my sense is that this one should work pretty well and probably better than some of the others because, as we sit here today, there's no countervailing pressure to initiate commercial fisheries right away. There is space and time that have allowed the governments to agree to this pause and to actually undertake the scientific research necessary.

Do you think all parties will honor the agreement for its duration?

I do. The two commitments that I described embedded in this agreement are not all that hard to fulfill. Yes, countries need to come up with the resources necessary to conduct the joint program in a robust way. I think that will happen. I think this agreement will be honored and will succeed in the ways that negotiators hoped it would.

Is there anything else that you would like to mention about this?

This fisheries agreement for the central Arctic Ocean was not negotiated in a vacuum. There has been a lot of work in the last decade to try to strengthen various regimes of governance and to improve international cooperation about the Arctic. Through the Arctic Council process, there was an agreement to cooperate on search and rescue in the Arctic. That was in 2011.

Two years later, again in the council, members negotiated another treaty to cooperate on potential oil pollution in the Arctic. And then the third council agreement was to promote scientific research more generally in the region, not focused on the Arctic Ocean or fisheries in particular. Through the International Maritime Organization, governments have also established stronger rules relating to shipping in the Arctic and the Antarctic, the so-called Polar Shipping Code.

And it's a really interesting question to me how, if at all, should these various efforts be coordinated. We don't have an answer to that yet. But with all this activity underway, at least that is a reasonable question to ask. Is there more that we need to do to improve Arctic governance to create governance of the Arctic Ocean heading into the future? That will be a key question.

Pew experts explore innovative ideas on the most critical subjects facing our world.

Construction workers transform a former restaurant at the Twin River Casino into a sports betting area. The Lincoln, Rhode Island, facility became the first in New England with legal sports gambling when it opened last November. *David L. Ryan/The Boston Globe via Getty Images*

States Jump at Chance to Boost Revenue With Sports Betting

After Supreme Court opens the door, policymakers must make critical regulatory decisions.

BY STEPHEN FEHR, ADAM LEVIN AND ALEXANDRIA ZHANG

Rhode Island lawmakers acted quickly after the U.S. Supreme Court on May 14 overturned a 1992 federal law barring sports betting. The next day, two state Senate committees met to discuss how to begin sports gambling there and where the revenue it generated would go. On June 22, Governor Gina Raimondo (D) signed a budget bill that included a provision launching sports wagering by the end of 2018 at two casinos.

Delaware, Mississippi, New Jersey, New Mexico, New York, Pennsylvania, and West Virginia also have legalized sports gambling this year. Betting bills have been introduced in 15 other states, where they are likely to be considered in 2019.

The high court ruling attracted immediate attention from state lawmakers; it meant they could pursue new dollars as many states are still struggling to recapture the levels of revenue brought in before the Great Recession of 2007–09. But policymakers face tough

questions about how much their states will collect from sports betting and what tax rates should be imposed on gambling venues.

Leaders in Rhode Island saw an opportunity. "Sports wagering provides the state with a revenue stream that supports critical priorities, such as investing in roads and schools, without increasing the tax burden," Senate President Dominick Ruggerio (D), said in a statement.

To tap into that revenue, the governor, lawmakers, and private gaming companies had to hash out the specifics of tax structure and revenue distribution. They set Rhode Island's share at 51 percent of net sport-gaming revenue; the operator, International Game Technology, will get 32 percent, and the casinos 17 percent. The two towns with casinos will receive $100,000 a year.

Rhode Island was one of the states hardest hit by the recession and has faced persistent budget deficits, so any new cash gets attention—even if it's a fraction of the $9.6 billion budget. State officials estimate the state will earn $23.5 million from gaming in the first fiscal year, which ends June 30.

Despite action in a number of states, market analysts are mixed on the potential benefits. In July, Standard & Poor's said the activity "may boost state gaming tax revenue, but those gains are unlikely to be sustained." And Moody's Investors Service found that even under the most optimistic scenarios, the revenue boost from sports betting would be minor.

The revenue comes primarily from taxes on gross gaming revenue—the amount a casino takes in from bets minus the amount paid out in wins—and licensing fees, typically not collected annually.

Even policymakers within states that have approved sports betting can have differing takes on the fiscal implications. Mississippi Governor Phil Bryant (R) said that sports betting revenue could help address the state's infrastructure deficit, but Democratic lawmakers have suggested that the likely revenue won't be enough to close the state budget gap.

Mississippi took its first bets Aug. 1, with a consultant estimating gross gaming revenue of $13 million to $65 million a year. That money would be taxable under the state's 12 percent rate—with 8 percent going to the state and 4 percent to local governments. In the first month, tax revenue from sports betting was $54,000—a pace that would total about $3 million for the year. That increased to $660,000 in September, when sports betting expanded to 21 of the state's 28 casinos and the football season started.

Nevada, exempt from the previous ban, was the only state with a robust sports betting market before 2018. Wagering there, taxed at 6.75 percent, generated $15.4 million in revenue in fiscal year 2017, according to Moody's. That represents about 1.7 percent of total gaming earnings and 0.3 percent of total revenue.

Delaware, the first state to launch sports betting after the court ruling, generated about $7 million in total bets for the first three weeks of June. The state keeps half of gross gaming revenue. By the end of August, sports betting had generated about $1 million in revenue.

In New Jersey, where sports betting also debuted in June, state Treasurer Elizabeth Muoio (D) expects about $13 million in related tax revenue for fiscal 2019—less than 1 percent of the $37.4 billion budget. Bets are taxed at different rates—from 8.5 to 14.25 percent, depending on where they are placed. In its first full month, sports betting brought the state between $300,000 and $500,000 in tax revenue on about $41 million in bets. That number is likely to grow, as bettors placed $260 million worth of wagers in October, bringing the value of total bets since mid-June to $600 million.

"Sports wagering provides the state with a revenue stream that supports critical priorities, such as investing in roads and schools, without increasing the tax burden."

Rhode Island Senate President Dominick Ruggerio (D)

West Virginia began allowing sports bets at its Hollywood Casino on Sept. 1, levying a 10 percent tax on adjusted gross receipts. Casinos offering sports betting also pay a $100,000 licensing fee every five years. Lawmakers expect the state to receive $5.5 million in taxes in the first year, which would increase to $13 million to $18 million annually in the next five years. In the first three weeks of sports betting, West Virginia took in about $100,000 in tax revenue.

Pennsylvania, which began offering sports betting in November, set its tax rate at 36 percent of gross betting revenue and required that operators pay a $10 million licensing fee. Those are both higher than in neighboring states, which could affect casino interest. The increasing availability of sports betting along the East Coast also could affect gaming here. Still, Pennsylvania revenue forecasters predict $30 million from sports betting licensing fees alone in fiscal 2019.

Policymakers have looked in recent years to excise taxes on gambling, marijuana, and tobacco for fresh revenue to help fill budget holes. A recent Pew report, "Are Sin Taxes Healthy for State Budgets?" found that taxes on these sources often are unpredictable in the long term, a concern that experts believe also applies to sports betting. As lawmakers consider whether to permit—and tax—sports betting, attention to how to plan for and spend this new revenue will be critical in building structurally balanced budgets.

Stephen Fehr is a senior officer, Adam Levin is a senior associate, and Alexandria Zhang is an officer with Pew's project on states' fiscal health.

RETURN ON INVESTMENT

The Pew Charitable Trusts applies a rigorous, analytical approach to ***improve public policy, inform the public,*** *and* ***invigorate civic life,*** *as these recent accomplishments illustrate.*

IMPROVING PUBLIC POLICY

The dramatic coastline and diverse corals of the north Kimberly will be protected in the Great Kimberly Marine Park, among the newest in Australia's expansive network. *Sara Winter/Shutterstock*

Australia marine parks now a reality

In July, 44 new federal marine parks became operational in Australia, putting in place a huge new network of reserves. In total, the parks measure 926,645 square miles, span almost the entire Australian coastline, and cross subtropical, temperate, and sub-Antarctic ecosystems. Pew and partners across Australia collaborated for years, throughout successive government administration changes, to make the network of reserves a reality.

President signs laws to help prepare for costly flood disasters

In October, President Donald Trump signed the Disaster Recovery Reform Act, a law that provides American communities with new resources and guidance to limit the impact of disasters. The law allows the president to set aside a portion of the nation's Disaster Relief Fund for pre-disaster mitigation projects—investments made before storms that will save lives and property when floods, hurricanes, and other natural disasters strike. Such investments pay off: The National Institute of Building Sciences has determined that, on average, every $1 spent on disaster mitigation saves society $6 in future disaster costs.

Two months earlier, President Trump signed the John S. McCain National Defense Authorization Act for Fiscal Year 2019, which includes flood mitigation requirements for Department of Defense facilities in at-risk areas. The new safeguards direct the Pentagon to disclose flood risk for construction projects and develop mitigation plans. The defense budget represents 16 percent of federal spending—the second largest of any federal program—and the legislation marks a significant step toward better protecting taxpayer investments and improving the military's operational readiness. Pew's flood-prepared communities project worked closely with key members of Congress to develop vital sections of the bills and build stakeholder support to help ensure their passage.

New England waters gain protections from herring trawlers

In September, the New England Fishery Management Council took decisive steps to restore the region's herring population and build a sustainable fishery. Members voted to protect the forage fish from midwater trawler boats within a buffer zone out to 12 nautical miles (nm) from shore along the entire New England coast. The zone extends to nearly 20 nm from shore around Cape Cod. The council also established a rule that will adjust future catch limits to respect the herring's key role in the Atlantic ecosystem and leave many more of the vital fish in the water for predators. The two measures will directly benefit marine wildlife, such as seabirds, cod, tuna, sharks, and whales, and will help coastal habitats thrive. Pew led the years-long effort through many steps, including initial scoping, scientific review, workshops, a public comment period, and securing key votes at the final meeting.

Pew launches public access to a platform for antibiotic research

After a year of testing and development, Pew's antibiotic resistance project opened access to its online, interactive antibiotic discovery platform in September. The Shared Platform for Antibiotic Research and Knowledge (SPARK) gives users unprecedented, one-stop access to a trove of curated data, including previously unpublished findings, and easy-to-use modeling tools to accelerate research and development. The SPARK initiative is a key strategy of Pew's work to spur innovation by helping researchers overcome basic scientific barriers to antibiotic discovery.

Pew releases report on improving electronic health record safety

The American Medical Association (AMA); MedStar Health, a large mid-Atlantic health system; and Pew's health information technology initiative published a report in August on best practices for improving the safety of electronic health records (EHRs). The report offers recommendations on improving the testing of EHRs for safety throughout the product lifecycle—from development through implementation and customization—and 14 test scenarios that EHR developers and health care facilities can use to evaluate safety. The report also includes a series of best practices that can be implemented by organizations to detect and mitigate potential safety challenges with EHRs.

Federal Sentencing Reform Now a Reality

In December, President Donald Trump signed the First Step Act, bipartisan legislation reforming the federal criminal justice system, which follows a trend in the states which have shown how to cut crime and incarceration simultaneously. Pew has worked around the country for a decade helping states develop research-based policy changes to control prison growth, hold people accountable, and protect public safety. These reforms have prioritized prison space for those who commit serious offenses, while reducing recidivism and providing more appropriate supervision alternatives for some incarcerated individuals. These steps are protecting public safety and saving taxpayers billions of dollars. The FIRST STEP Act represents an important stride toward implementing similar evidence-based sentencing and release policies in the federal criminal justice system.

INFORMING THE PUBLIC

American views on news sources

In September, the Pew Research Center released an update to its annual research examining the share of Americans who get news on various social media platforms. The report found that 68 percent of U.S. adults say they at least occasionally get news on social media, though 57 percent of that group expect the news they see there to be largely inaccurate. Republicans are more negative about the news on social media than Democrats. Among Republican social media news consumers, 72 percent say they expect the news they see there to be inaccurate, compared with 46 percent of Democrats and 52 percent of independents. Even among those Americans who say they prefer to get news on social media over other platforms (such as print, TV, or radio), a substantial portion (42 percent) express this skepticism. And while 42 percent of those Democrats who get news on social media say it has helped their understanding of current events, 24 percent of Republicans say the same.

Women at the top

The Pew Research Center published a report in September finding a majority of Americans say they would like to see more women in top leadership positions in both politics and business. But most say men still have an easier path to the top and that women must do more to prove their worth. There is, however, a wide partisan gap on the issue, including on the factors that are holding women back. Democrats and Democratic-leaning independents are more than twice as likely as Republicans and those who lean Republican to say there are too few women in high political offices (79 percent versus 33 percent). While 64 percent of Democrats say gender discrimination is a major reason why women are underrepresented in these positions, only 30 percent of Republicans agree. There are also wide gender gaps in views about women in leadership. About 7 in 10 women say there are too few women in high political offices and in top executive business positions; about half of men say the same. And women are far more likely than men to see structural barriers and uneven expectations holding women back from these positions. About 7 in 10 women—versus about half of men—say a major reason why women are underrepresented in top positions in politics and business is that they must do more to prove themselves.

Some aquarium fish, like this pale pink tetra, are being modified to glow through the engineering of a fluorescence gene. *GloFish*

Americans weigh in on genetic engineering

The Pew Research Center released a report in August that found that Americans' views on genetic engineering of animals vary widely. Presented with five scenarios that are currently available, in development, or considered possible in the future, Americans provide majority support only for the two that have clear potential to pre-empt or ameliorate human illness. Seven in 10 Americans (70 percent) believe that genetically engineering mosquitoes to prevent their reproduction and therefore the spread of some mosquito-borne diseases would be an appropriate use of technology. A 57 percent majority considers it appropriate to genetically engineer animals to grow organs or tissues that could be used for humans who need a transplant. But other uses of animal biotechnology are less acceptable to the public, including the creation of more nutritious meat for human consumption (43 percent say this is appropriate) or restoring an extinct animal from a closely related species (32 percent say this is appropriate). And one application that is already commercially available is largely met with resistance: Just 21 percent of Americans consider it an appropriate use of technology to genetically engineer aquarium fish to glow using a fluorescence gene.

A man appears dwarfed walking through the enormous fabric silhouettes of the art installation 'habitus,' which was created by award-winning artist Ann Hamilton. The work was first displayed in Philadelphia's Fabric Workshop and Museum. *Joe McFetridge*

Pew-funded arts projects reach new eyes in Philadelphia and beyond

Following their premieres in Philadelphia, Pew Center for Arts & Heritage-funded projects continue to find broader audiences. The large-scale visual art installation "habitus" by award-winning artist Ann Hamilton, which was originally commissioned through a center grant awarded to the Fabric Workshop and Museum, traveled to the Converge 45 arts festival in Portland, Oregon, in September. Theater company New Paradise Laboratories took its physical theater piece "O Monsters" to the 2018 Capital Fringe Festival in Washington, D.C., in July. Dance artist Madhusmita Bora's film, which documents the classical Indian dance form of Sattriya and her work with the Dancing Monks of Assam, was screened at the Mustard Seed South Asian film festival in Philadelphia in August. In October, composer and 2018 Pew fellow David Ludwig followed up his world premiere of "The Anchoress" with a performance of the work at New York City's DiMenna Center for Classical Music.

END NOTE

A New Way to Categorize Americans By Religion

HIGHLY RELIGIOUS

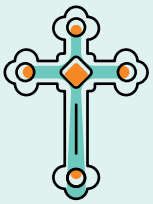
17% **Sunday Stalwarts:** Religious traditionalists actively involved with their faith and engaged in their congregations

12% **God-and-Country Believers:** Socially and politically conservative, most likely to view immigrants as hurting American culture

11% **Diversity Devout:** Traditionally religious, but majorities also believe in psychics, reincarnation, and that spiritual energy can be located in physical objects

NON-RELIGIOUS

12% **Religious Resisters:** Most think organized religion does more harm than good; politically liberal and Democratic



Most U.S. adults identify with a particular religious denomination or group such as Catholicism, Protestantism, Judaism, or Islam. Others consider themselves atheists, agnostic, or say they have no affiliation. But the Pew Research Center looked at beliefs and behaviors that cut across many denominations—traits that unite people of different faiths and those that divide people with the same affiliation—and came up with a new typology of religion in America. These new classifications sort people into seven groups based on the religious and spiritual beliefs they share, how actively they practice their faith, the value they place on their religion, and the other sources of meaning and fulfillment in their lives. While race, ethnicity, age, education, and political opinions were not among the characteristics used to create the groups, some of them have strong partisan leanings or distinctive demographic profiles, illuminating the intrinsic connections between religion, race, and politics in America.

Take a quiz and find out where you fit in at pew.org/ReligiousTypology

SOMEWHAT RELIGIOUS

17% **Relaxed Religious:** Say it's not necessary to believe in God to be a moral person. Religion is important to them, but few engage in traditional practices.

15% **Spiritually Awake:** Few practice religion in traditional ways, but most believe in heaven and hell, and subscribe to New Age beliefs

17% **Solidly Secular:** Hold virtually no religious beliefs and reject New Age beliefs

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"It totally changed my life," Alex Da Corte says of his Pew Fellowship in the Arts.

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John Bernardo, courtesy of the artist and Luxembourg & Dayan