



Center for the Future
of Museums



TRENDSWATCH 2015



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Introduction

With this fourth edition of *TrendsWatch*, I feel the report is indeed becoming a toddler—beginning to get around on its own, causing some joyous chaos as it knocks about in the world. It has been extremely gratifying to watch each issue go forth and create ripples of change.

Each year, creating this report gets easier in some ways and harder in others. Easier as I become more confident of my ability to see patterns emerge from what I read, hear and see in the course of my scanning. Harder as I become increasingly aware of how those patterns intertwine, making it difficult to separate them into distinct topics. More than once, as I composed this year's text, I found myself hesitating over an example, unsure which chapter to slot it into.

For example, Yerba Buena Center for the Art's YBCA:You program is a great illustration of personalized service—but it also can help people to slow down and focus on an exhibit or an individual work of art. Prosthetic limbs tailored to an individual's physical needs and aesthetic sensibilities offer another kind of personalization, but they are also the ultimate wearable technology. Genomic data, which supports the creation of personalized medical treatments, are also being pooled in a **Genomic Data Commons**—making the data open to researchers who need big data sets to support their work.

The trends of climate change and ethical consumerism, in particular, are interlaced—sometimes reinforcing each other and sometimes in conflict. Ethical Fashion, with its emphasis on sustainably sourced materials, can **help combat global warming**. On the other hand, one way of securing the food supply in the face of climate change is to develop resilient crops, and the creation of such crops can be accelerated by genetic engineering. However, many people feel that the technology used to

develop genetically modified organisms is unnatural and, in fact, unethical. I am particularly troubled by the implications of these two intersecting trends for zoos and aquariums: How does the prospect of a world reshaped by climate change alter the ethical justification for keeping wild animals in captivity? This poses a challenge for zoos and aquariums: You can't be an ark—a temporary place of refuge—if the habitat in which a species originated has effectively ceased to exist.

Many of the trends I feature this year are related to those covered in previous editions of this report. Slow Culture is a reaction to the same stresses that drive people to “Disconnect to Reconnect” (*TrendsWatch 2013*). Digitally mediated personalization is made possible in part by “Big Data” analytics (*TW14*), as the fabrication of personalized products is facilitated by 3D printing and scanning (*TW13*). Personalized learning is one of the emerging characteristics of the “New Educational Era” (*TW12*).

As always, I hope that the analysis and observations in *TrendsWatch* catalyze your thinking about the future. Remember—the trends and events you see shaping the world do not dictate what will happen in coming decades, they merely push us towards potential outcomes. You, and your organization, can be powerful forces of change—use this report to help envision the future as you want it to be, and how you can make that come to pass.

Yours from the future,

A handwritten signature in black ink that reads "Elizabeth Merritt". The signature is fluid and cursive, with a long horizontal stroke extending to the right from the end of the name.

Elizabeth Merritt, Founding Director, Center for the Future of Museums



CFM Director Elizabeth Merritt engaged in Slow Reading.

How to Use This Report

***TrendsWatch 2015* highlights six trends** that CFM's staff and advisors believe are highly significant to museums and their communities, based on our scanning and analysis over the past year. For each trend, I provide a brief summary, list examples of how the trend is playing out in the world, comment on the trend's significance to society and to museums specifically, and suggest ways that museums might respond.

Here are just a few of the ways people and organizations have used previous editions of *TrendsWatch*:

- The Baltimore Museum of Art posted a print copy in their staff lunchroom, tethered to a pencil with an invitation to annotate the text. A sticker on the cover encouraged colleagues to “steal this report” by downloading the digital version, and to share their reactions on the in-house blog. [↔](#)
- An instructor at Johns Hopkins University assigned *TW14* to students in a history of museums course, asking them to look for connections between the current trends and forces that have shaped our field in the past.
- Many museums have used the report with their boards and committees to inform strategic and business planning.



To instigate these and other creative uses of the report, I encourage you to share copies with:

- the museum's executive and planning teams
- the entire staff (paid and volunteer)
- members of your governing authority
- local foundations and major donors
- policy makers and government representatives
- members of key community groups and museum partners
- the press

To foster discussion, you might host brown-bag lunches, make the report an agenda item for staff or board meetings, or organize your own forecasting workshop. (The CFM report *Tomorrow in the Golden State: Museums and the Future of California* provides a brief guide to organizing such events.) At these gatherings, encourage people to explore the following questions:

- How are these trends playing out in your community, state, region or country?
- Which trends are likely to have the greatest effect on your organization?
- How might your museum take advantage of the opportunities or avoid the risks these trends present?

If you are not directly involved in museum planning, you might organize similar conversations in other settings, such as museum studies classes or professional conferences.

Another way to use *TrendsWatch* is to make it a guide for your own scanning—helping you focus your attention and filter news, essays and social media that land in your mailbox or cascade across your screen. In the coming year, keep an eye open for news and opinion pieces illustrating how these trends are playing out.

The PDF version of this report includes copious embedded links to news stories, blog posts, research reports, videos and other resources. (These links were all working at the time of publication, but we can't guarantee they will remain stable over time.) If you are reading a print copy of the report, you can access the digital version with links, as well as all of CFM's other forecasting reports and scanning tools, at the CFM website futureofmuseums.org. Please share any stories you think shed light on these or other important trends with CFM via e-mail at emerritt@aam-us.org or twitter [@futureofmuseums](https://twitter.com/futureofmuseums). And please write and let me know what you think about *TrendsWatch* and how you use it in your work. Together we can build a formidable forecasting network to help museums chart a successful course to the future.



YOUR CITY: TURNING DATA INTO KNOWLEDGE

What does data mean for the future of our communities?

We're helping cities and communities use data to make better decisions about the future of their communities.



Visualizing Chicago's Building Stock

Chicago's building stock is a complex and ever-changing landscape. This visualization shows the distribution of building heights and footprints across the city, highlighting areas of high density and growth.

Height Category	Color
100 - 200	Blue
200 - 300	Orange
300 - 400	Yellow
400 - 500	Red
500+	Dark Blue

Chicago's building stock is a complex and ever-changing landscape. This visualization shows the distribution of building heights and footprints across the city, highlighting areas of high density and growth.



CHICAGO ARCHITECTURE FOUNDATION

YOUR BLOCK: BUILT FOR INDUSTRIAL, ADAPTED FOR DATA

The “Open” Economy: filling the data pipeline

Previous pages: Chicago: City of Big Data at the Chicago Architecture Foundation highlights how city planners, architects, designers and citizens use open data to design for the future. Photo: Ann Evans, Chicago Architecture Foundation

“‘Open’ is already on track to supplant ‘participatory’ as buzzword of the year, with good reason. The proliferation of groups supporting and encouraging openness in the cultural/creative sector is impressive. Wikimedia, Creative Commons, the Open Knowledge Foundation, free software advocates, open-source software advocates: the list gets longer all the time.”

—Ed Rodley

The open culture movement in all its permutations—open source, open software, open government—calls for a fundamental cultural shift from the assumption that information should be tightly controlled to the presumption that content should be made available to everybody, absent a compelling reason to keep it locked up. Open content licensing and Creative Commons copyrights encourage people to reuse, remix and redistribute material. Open source software invites programmers to mess with the underlying code. And the open data movement is racing to get information out in the world, where it can do some good. Governments are adopting open data policies and pouring money into creating open data infrastructure; companies are springing up to exploit these new resources; individuals are exploring how access to data sets empowers them as individuals, citizens and entrepreneurs. Museum data—cultural, scientific, especially operational—has traditionally been closely controlled. In a world pivoting towards open, can museums afford to be left behind?

Open data is **FOIA (Freedom of Information Act) on steroids**. Back in the 1990s, we made a quantum leap towards openness when floppy discs supplanted poor-quality photocopies as a format for obtaining government records. Now, four years after the federal government created data.gov, that open national data repository contains more than 400,000 datasets from 175 agencies. Last fall, when Minneapolis became **the 16th U.S. city to pass an open data policy**, one city council member explained the action by declaring, “It’s the people’s data, and it should be out there.”

Once data *is* “out there,” people find all sorts of wonderful ways to connect, analyze and mash it up to serve a variety of goals. Open data fuels civic activism and civil rights, as when the New York State Civic Engagement Table **merges voting history data with data on public housing** to empower community organizers. It supports scholarship and exploration, as when **MapStory** enables anyone to access, manipulate and annotate public domain map data to “improve our understanding of global

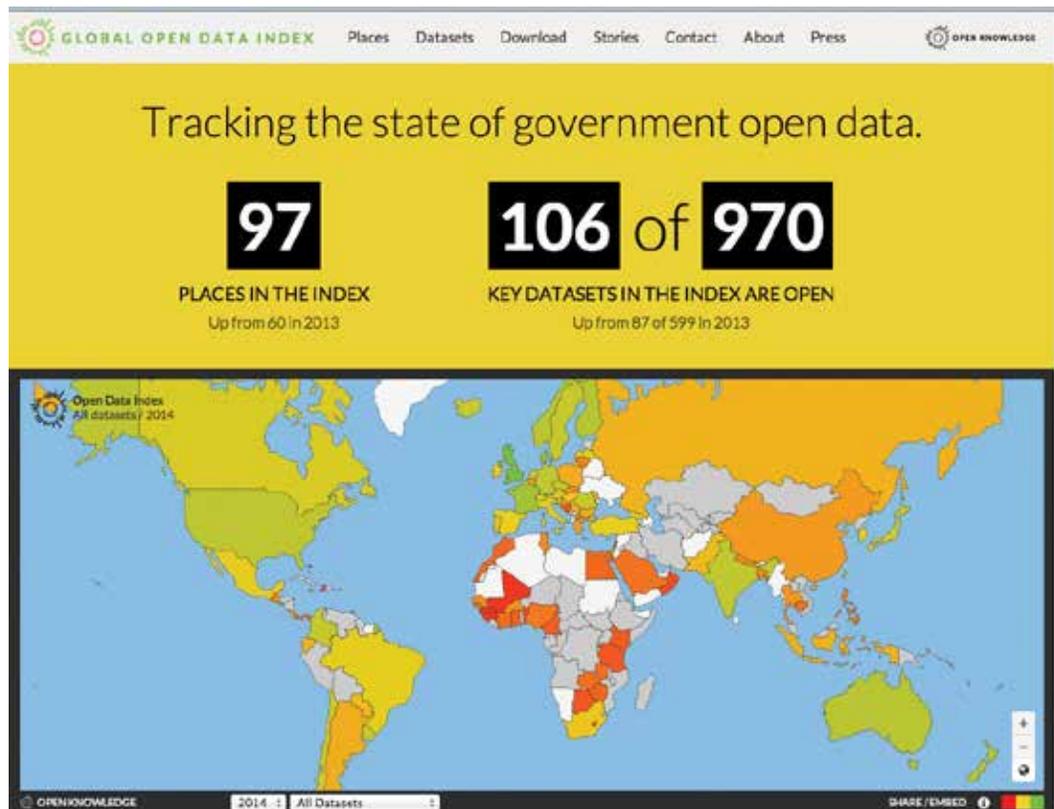
dynamics, worldwide, over the course of history.” It transforms city planning, as when the **Denver Regional Equity Atlas** layers data about education, income, health and other measures of equity on plans for the new transit network.

“Open” comes at a cost, of course. Building the infrastructure to support publicly accessible databases **isn’t cheap**. Last year the European Union announced it was sinking the equivalent of nearly \$18 million into **three open data initiatives**—an open data incubator, a Web data research network and an academy to train data scientists. But although the major impetus for open data is government transparency and

accountability, open data systems **can save money as well**. City governments, for example, can use open data to monitor compliance with regulations or respond to citizen concerns in cost-efficient ways.

As the **Open Knowledge Foundation** points out, “Open Knowledge is what open data becomes when it is useful, useable and used.” Many barriers stand in the way of converting data to knowledge, the foremost being compatibility. Interoperability is chimerical if data sets aren’t configured to talk to each other. To this end Code for America is **promulgating recommended formats** to make data easier to access and use. Another thorny issue is “gray

Global Open Data Index



At the White House's second annual National Day of Civic Hacking, civic activists, technologists and entrepreneurs used publicly released government data to improve their communities.

data”—data that is only half open, redacted or partially released. With so much data backlogged, and with more being generated at an astounding rate, there is also the question of what to prioritize.

What This Means for Society

Open government data **facilitates transparency, accountability and participatory democracy**. But progressing from data to knowledge is not enough—we have to use knowledge wisely if it is to make the world a better place. Open data could be a force for good, as individuals and civil society organizations use public data to improve their communities, and it could be an impetus for government officials and contractors to self-censor, obfuscate or falsify information.

Open data, like digital fabrication, is a technology with the potential to catalyze economic growth, spawning jobs that replace those lost in dying industries. A **growing list of private companies** are building their businesses around public data, working in the realms of business data, health care, energy, education, transportation, real estate and more.

The current focus of the Open Data movement is government data since we (the public) already “own” this information. Now foundations are driving openness as well—recently the **Gates Foundation announced** that all the research they fund must meet the standards of open access publishing, including the requirement that all the data underlying published



research results be accessible and open immediately. However, many private companies (e.g., Facebook, Google) amass and monetize huge databases culled from users' online behavior. Will we come to expect that this data (which is, in some sense, ours) be made open as well?

As we push towards “open,” society has to grapple with what data can or should remain veiled. Edward Snowden's theft of data from the National Security Agency dramatized this issue: on one hand, the information he leaked sparked a much-needed debate on appropriate limits for covert monitoring of U.S. citizens. On the other hand, many maintain his actions seriously damaged U.S. security and **strengthened world terrorism**. The debate about when data should be open or closed is playing out across the country on smaller stages as well. In Honolulu, **two public officials resigned**



Museum Examples

The Smithsonian Cooper-Hewitt has made its **entire collections database available on Github** (a public database repository) using a Creative Commons “no rights reserved” license. They even wowed the Maker community by making the **3D scan data of Andrew Carnegie’s mansion** (the building they inhabit) free to download, remix and reuse. Also in the spirit of “open,” the museum is **giving away the “Cooper Hewitt” typeface** it commissioned to mark their reopening after three years of renovation—not just the font, but the source code, so designers can mess with it.

The **entire digital collection of the Tate Modern is available on GitHub** as well, and the museum has fostered playing with open

data. In June 2014 the museum hosted “**Hack the Space**,” inviting participants to camp out in the museum overnight with the assignment “take any form of data and transform it into a creative digital artwork.” The winning project used a database from Chinese artist Ai Weiwei that contains the names of 5,196 children and young people who died in an earthquake in 2008. On a lighter note, a team dubbing itself the Pharmaceutically Active Crustaceans used data on how antidepressants in the human waste stream find their way into sea life, programming plush lobsters to tweet about their mood.

In December 2014, staff of the natural history museums of the University of Colorado-Boulder and Florida State University helped organize the **CitStitch Hackathon**, sponsored by iDigBio and the Zooniverse Notes from Nature Project. The hack promoted public participation in the digitization of biological collections, and was characterized as “a ground-breaking citizen-science endeavor with immediate and strong impacts in the areas of biodiversity and applied conservation.”

The Institute of Museum and Library Services’ Museum Universe Database File (MUDF) has been pulled into Github. Patrick Murray-John at the Roy Rosenzweig Center for History and New Media at George Mason University **used MUDF** to create the **US Museums Explorer**, using a Linked Open Data connection to pull in text and photos from Wikipedia entries about museums. This application demonstrates both the power and limitations of open data: Murray-John evidently found it pretty easy to prototype the ultimate online index to browsing and searching for U.S. museums, but the results are muddled by the imperfections of the MUDF database, which is still being edited and proofed.

The Cooper Hewitt, Smithsonian Design Museum encourages users to download free **3D scan data of its building** (the former mansion of Andrew Carnegie) for remix and reuse.

because of a bill that required them to submit asset disclosures online—believing that their right to privacy trumped the public’s right to know. Recently the startup **Hipcamp protested an RFP by the U.S. Forest Service** for management of the Recreation.gov website, arguing that the terms of the proposal let the service provider keep too much commercially valuable data secret. When does too much openness threaten an individual’s right to privacy, or a company’s need to protect data from competitors?

What This Means for Museums

In **“The Virtues of Promiscuity,”** an essay for the Code|Words project, Ed Rodley observes that a “central part of the missions of successful museums in the present century will be, as Will Noel puts it, ‘to put the data in places where people can find it—making the data, as it were, promiscuous.’” Museums already hold their collections in trust for the public, both from an ethical and a legal perspective. Should the same principles apply to associated data? In that case, building digital infrastructure to support data sharing is as fundamental as creating exhibit galleries and collections storage facilities.



Museums traditionally regard some categories of data as secrets to be kept rather than as knowledge to be shared. For example, in natural history museums it has long been considered appropriate to redact data on collecting localities for sensitive, rare or endangered species. A recent paper in *Collections Forum* (see Further Reading, below) challenges this convention, arguing that *all* collections data



should be freely accessible unless such release contravenes applicable laws or regulations; is prohibited by an agreement with the collector, donor or landowner; or is justified in restriction by “very specific circumstances” (their emphasis). What circumstances warrant exemptions to a general commitment to “open?”

For museums, one important manifestation of the open culture movement is **open authority**, which Lori Byrd Phillips has defined as “a mixing of institutional expertise with the discussions, experiences, and insights of broad audiences.” Museums are deconstructing, piece by piece, the authoritarian model that presumes

control of what people see, what they learn and how they learn it. Open data vastly accelerates this trend, vaulting us into a world in which users bypass museum controls and filters and go straight to the source. That prospect can be pretty scary. Will open data deprive museums of income streams that come from mediated access? Will it mean that museum curators don’t have first crack at publishing on collections they study?

On the other hand, when museums put their data out there for users to play with, they may learn a tremendous amount about what people value about their work, and how people want to work with them.

This Rosa Bonheur sketchbook from 1847 is one of 100,000 digitized images and associated metadata the Getty Research Institute has made available via the Digital Public Library of America. Photo: Getty Institute 850837(f.5)

Museums Might Want to...

Audit their data, decide what should be made “open,” and create a timeline and budget for doing so. This audit should include an assessment of the challenges inherent in this process: What is the quality of the collections data? Are there legal restrictions on what can be released? What data should be prioritized, and why? Create policies regarding what data will be made public, and how. Consider what data, if any, will be kept confidential, and outline a rationale for those exceptions that is itself made publicly available.

Treat data as an asset to be managed, tracked and (when appropriate) monetized. Compiling data isn't cheap, whether it is an image bank created via digital scanning or information on visitor behavior amassed from a program such as the DMA Friends. To create a balanced economy of data, museums need to invest in infrastructure and ongoing costs, and this may be supported, in part, by the sale or licensing of data, to underwrite the portion that is provided in a free and open manner.

Invite users to play with the museum's data. In February 2013 the White House held its first **Open Data Day Hackathon**, inviting programmers and technology experts to work with White House staff to build tools using the newly released **We the People** API. (API stands for Application Programming Interface—a set of protocols and tools for building software applications.) **Data Jams, Hackathons and Datapaloozas** are becoming common, and

museums can instigate their own, encouraging scientists, artists, students, technologists and the general public to mess around with the museum's data, or play with data related to the museum's work and share the results.

Publicize the open data available about the museum's collections, research and operations and encourage individuals, companies and government entities to use it in their own work. This is one way museums can contribute to civic planning, community activism, entrepreneurship and self-directed learning.

Identify what public open data could be harnessed for the museum's own purposes—for example, city demographics, use of public



Ethical Everything: managing the moral marketplace

“To give real service you must add something which cannot be bought or measured with money, and that is sincerity and integrity.”

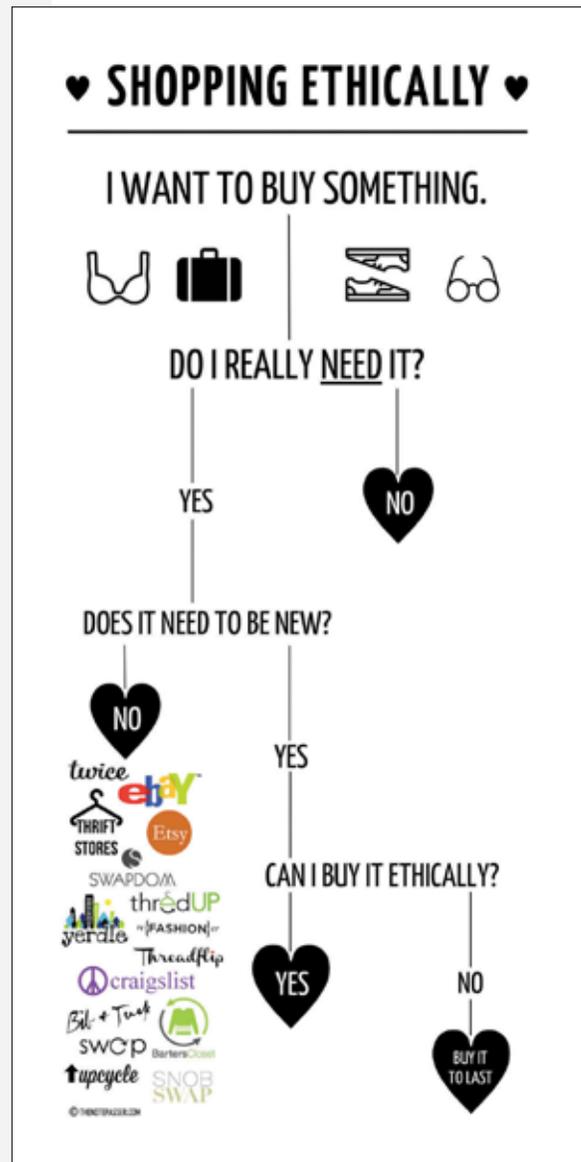
—Douglas Adams

Increasingly the press and our peers remind us that each purchase we make and each bite we take has ripple effects on the world. The fact that, in this Internet age, we could research and vet the entire life cycle of a product or service, creates an expectation that we should. And this, in turn, leads to increased demand for transparency and accountability in behavior, sourcing and production. United and empowered by the Internet and by social media, today’s consumers wield unprecedented power, and woe betides any company that crosses the invisible ethical line. And nonprofits, traditionally assumed to be on the side of angels, don’t get a free pass in this era of soul-searching.

On April 24, 2013, a garment factory housed in the eight-story Rana Plaza collapsed in Bangladesh, killing 1,129 people and injuring over a thousand more. Echoing the Triangle Shirtwaist Factory Fire of 1911 and its aftermath, this event triggered nationwide protests among

workers and sparked global soul-searching over the role that consumers and the fashion industry play in creating exploitative, dangerous, low-wage jobs in the third world. The fashion industry is responding in a variety of ways, from startups emphasizing ethical sourcing and recycled materials and durable goods, to **Vivienne Westwood**, the progenitor of punk fashion and now a major force in fashion design, declaring “**we might be able to save the world through fashion.**”

Social justice concerns are becoming a mainstream part of retail branding, as **32 percent of Millennials** have stopped buying from companies they feel fall short when it comes to ethics and social practice. Food has become an impossibly fraught ethical minefield. Eat beef and fuel global warming; eat quinoa and contribute to the **collapse of traditional farming in Bolivia**. Buy tomatoes in the winter and **support slavery in Florida**. Scientists are even creating **yeast that synthesizes milk** so



Left: The Swiss manufacturer Freitag has designed a line of clothing that is **100 percent compostable**, and is woven from low water-usage crops. Photo: Oliver Nanzig

Above: “Shop Infographic” Image credit: Elizabeth Stilwell, thenotepasser.com

we don't have to exploit cows. Whole Foods, long dogged by its image as a purveyor of luxury foods to the elite (“Whole Paycheck”) is **rebranding itself around values**, positioning its choice of what to sell, and at what prices, as being about responsibility. “To us,” WF declares, “value is inseparable from values.”

These scruples apply not just to purchasing decisions, but to broader expectations of

corporation citizenship. A recent **survey of Millennials** by Deloitte showed that a majority feel that business can do more to tackle resource scarcity, climate change and income inequality. Pay equity is ballooning into a huge issue, whether it focuses on providing a living wage or reining in CEO salaries. And ethics get personal when the public feels that a company has violated ethical norms regarding their personal data—see, for example, the firestorm

Installation view of *Moving Ghost Town* at the Aspen Art Museum, Aspen, Colorado, 2014. Artwork: Cai Guo-Qiang. Photo: Lydia Ohl, courtesy Cai Studio

when it was revealed that **Facebook allowed researchers to tinker with users' newsfeeds** to see if they could manipulate their moods. Incidents like that pave the way for startups like Sgrouples and Ello that promise to provide “ethical social networking”—ad free and without the pervasive data collection and surveillance that characterize the big players in this field.

On August 13, 2014, the value of Sea World stock **plunged 33 percent in one day** after the company announced a **5 percent decrease in attendance and an 8 percent drop in revenue** even as attendance at other attractions increased by 5 percent. PETA and other activists had been picketing Sea World for years, but the ethics of keeping whales in captivity was catapulted to national attention by the documentary film *Black Fish*. The accompanying **storm of social media** (hashtag #Blackfish) paved the way for a bill in California that would have banned killer whales in captivity. The bill didn't pass, but Sea World's reputation took a heavy economic hit. This demonstrates how ethical concerns that may have previously been confined to fringe groups can spread like wildfire via mainstream and social media either spontaneously or through orchestrated campaigns.

What This Means for Society

Our heightened attention to ethics is driven in part by emerging technologies. We didn't worry about manipulating the genome of our food until we started doing so in the lab, rather than the old fashioned way. The current debates



over net neutrality are as much about the ethics of equitable access to a resource that has become as basic as water or electricity, as it is about economics. We didn't debate whether robots guided by artificial intelligence should be **allowed to wage war** on our behalf until we created functional prototypes that can do just that. As we gain the capacity to screen the genome of embryos, disability rights activists are arguing it is unethical to choose not to have a child with Down's Syndrome, or dwarfism, or a host of other congenital “abnormalities,” tagging the practice as **“the new eugenics.”**

Corporations big and small are rethinking how to manage their reputations, realizing they can't control their public image solely through advertising campaigns. When a single tweet, like **#DeleteUber**, can amplify to reach millions, individuals have the power to call

companies on errant behavior. Social media specialists are on the front line of reputation management—navigating when to delete, respond to or simply endure critical comments. Many industries are proactively adopting Corporate Social Responsibility policies to self-regulate compliance with ethical norms (and fend off legislative oversight).

What This Means for Museums

Nonprofits aren't exempt from the ethical lens being brought to bear on the world, and museums can't take for granted that people think they are the good guys. Concerns about animal rights, for example, are triggered by various aspects of museums' work. This past year an installation by artist Cai Guo-Qiang at the Aspen Art Museum **triggered protests** when he glued iPads displaying video of local ghost towns to the backs of three African tortoises. A museum spokesperson's response ("It is not the Museum's practice to censor artists") didn't quell concerns of people who felt the work of the artist was itself ethically questionable. Similar protests led to the cancellation of an art project funded in collaboration with the University of Kansas's Spencer Museum of Art, which would have ended with the **slaughter of chickens** to provoke debate about the ethics of food and farming. (#Irony.)

Ethical fastidiousness about respecting animal life can spiral to extremes (as in **an essay** in the *New York Times* advocating the extinction of all carnivorous species, and the firestorm of Internet hate unleashed on a researcher at the Harvard Museum of Comparative Zoology who **blogged about collecting a single Goliath**

birdeating spider). However, it manifests itself in more mainstream forums as well—see, for example, the recent spectacle of **scientists scolding other scientists** for killing animals as voucher specimens. Both the Boston Aquarium and the **Georgia Aquarium** have come under fire for their proposals to keep whales in captivity—in the eyes of the general public, the line dividing commercial aquariums/theme parks like Sea World from their nonprofit kin is already thin (if not invisible). It is imperative for both living and nonliving collections to set forth clear and compelling ethical rationales for the taking, and holding, of life.

Labor rights groups have staged repeated protests about the **work conditions of migrant laborers** building the Guggenheim's branch in Abu Dhabi, orchestrating campaigns designed to influence the museum's trustees and donors. This dramatizes museums' need to examine not only their own practices, but those of their subcontractors and partners both at home and abroad.

While the laws regarding unpaid internships are quite clear for for-profit companies, nonprofits exist in a grey area "awaiting clarification" from the Wage and Hour division of the U.S. Department of Labor. However, unpaid internships are increasingly being cast as **a moral issue for nonprofits**. In the past two years, both the British Museum and the Serpentine Gallery have been subject to protests regarding their use (or proposed use) of unpaid labor. In a field that relies heavily on volunteers (a typical ratio being 6:1 unpaid:paid staff) the issue of **distinguishing among various types of unpaid staff** therefore becomes very fraught.

At the other end of the pay scale, there is also increasing concern in both the for-profit and nonprofit realms about the ethics of the ratio between **a leader's salary and that of the lowest-paid worker**. In the past few years, janitorial and food service employees of the Smithsonian have **repeatedly gone on strike**, demanding a wage that would enable them to live in or around the nation's capital. Last fall, as a union made the same demand of **the U.K.'s National Trust**, a spokesperson declaimed, "These are the guardians of our national

heritage, yet they are left to struggle on with wages from a bygone era."

There is growing skepticism about the efficacy of the firewalls museums create between major donors or corporate sponsors and the museum's research and interpretation. Last year, in conjunction with the People's Climate March in New York City, the artists' collaborative Not An Alternative debuted a pop-up, "**the Natural History Museum**," at the Queens Museum. That project questions

Museum Examples

The Royal Museums Greenwich have committed to purchasing for their retail outlets only goods that have been produced under fair labor conditions and have been selected for minimal impact on climate change. Their **publicly available commitment** to values governing both labor and environmental standards is clear about the fact that this promise not only protects their brand and reputation, but adds to the perceived value of their offerings and builds "an Audience which is interested in ethical, recycled, UK-made and hand-crafted product."

In 2013, the Field Museum of Natural History hired Emily Graslie, a creator of the popular YouTube video series **The Brain Scoop**. In a time when, as noted above, natural history museums are subject to heightened scrutiny about killing animals, it is important to educate people about what research collections are and

what they are for. Graslie helps the entire sector when she explains in a compelling, personally engaging way why a museum might want to **skin a wolf** or **stick a pin in an insect**.

Last year the Museum of Modern Art organized a panel on synthetic biology and design, "**Synthetic Aesthetics: New Frontiers in Contemporary Design**," which explored the "notion that imagined realities might give birth to material realities imposes serious ethical questions on artists who use synthetic biology in their work." Museums can play a role in helping the public work through issues related to choices raised by emerging technologies. Art is an engaging and nonthreatening platform for asking questions like: Just because we can do something like manipulating our own DNA or bioengineering our environment, does that mean we should?

whether museums like the American Museum of Natural History (AMNH) and the National Museum of Natural History have softened their message on climate change as a consequence of receiving significant gifts from billionaire David Koch (who also sits on the board of AMNH). In the U.K., **Liberate Tate** has staged a series of interventions protesting the ties between cultural institutions and the oil industry.

Museums Might Want to...

Review and revise their ethics statements to address emerging issues. Traditional areas of concern like conflict-of-interest and provenance research may need to be expanded to include sections on internships, privacy of digital data and the ethical provenance of art displayed in the museum. Policies on individual and corporate support may need to be updated and strengthened, and museums working in the global arena may want to take a proactive stance on ethical concerns related to that work.

Commit to ethical sourcing of inventory offered in the museum shop and food sold in the museum food services. (This has the added benefit of tying the retail aspects of the museum to the organization's mission, and potentially folds retail into the overall interpretive framework.)

Review policies about endowment investing and corporate sponsorships. There is a national trend of universities and other nonprofits engaging in **fossil fuel divestment**. Union Seminary characterized the act of **pulling their investment from fossil fuels** as "a bid to atone for the 'sin' of contributing to climate

change." Now might be a good time to discuss what investments are consonant or inconsistent with the museum's mission and values.

Debate the pros and cons of having people on the board who publicly and professionally advance causes antithetical to the museum's mission, whether that be science, sustainability or children's health. As Chris Norris has pointed out on the Prerogative of Harlots blog, on one hand museums need to **protect the trust** the public places in our independence, on the other hand it may be "**better to have [people with divergent views] at the table than to exclude them.**"

Review the museum's policies regarding compensation, and hold open and frank discussions about issues including unpaid internships, highest-to-lowest paid worker ratio and paying a living wage.

Further Reading

The Ethical Trading Initiative promulgates the **ETI Base Code**, an internationally recognized code of labor practice founded on the conventions of the International Labour Organisation (ILO). "Adhering to this code helps improve working conditions in global supply chains." <http://www.ethicaltrade.org/eti-base-code>

A Discussion Guide for Executives about Communications and Ethics. (PDF, 15 pp.) This guide from the Ethics Resource Center provides an introduction to the value of publicizing an organization's commitment to ethics, strategies for making the public case for integrity and key messages for consumers. While designed for for-profit companies, it may be useful to nonprofit organizations as well. <http://www.ethics.org/resource/building-corporate-reputation-integrity>



Buyers can personalize artist Joshua Harker's *Self Portrait Masks* by changing the design parameters and shaping it to a biomorphic scan of their own face. This photograph, taken by Harker, is entitled *21st Century Portrait Mask*.

It's Personal: one size does not fit all

"At the forefront of these revolutionary possibilities is personalized medicine, which is the idea of precisely tailoring each person's medical care to his or her own unique genetic makeup. In fact, if all goes as we envision, today's mostly one-size-fits-all approach to medical care will seem as outdated to future generations as bloodletting leeches and patent-medicine potions are to us."

—Francis Collins

The industrial era birthed the modern retail industry through the mass production of affordable goods. Handmade and bespoke items quickly became synonymous with luxury: only the wealthy could afford goods made to their personal measure. Now we've come full circle, as technology makes it relatively cheap and easy to personalize goods and services to each individual user, or use "mass personalization" to create the illusion of individual attention. This trend is playing out in three arenas: the creation of personalized goods, the filtering of personalized content and the creation of personalized experiences. Audiences of the future, shaped by the broader marketplace, may expect museums' products, communications and experiences to be tailored to their interests and needs.

The trend towards personalization results from the interplay of technological and cultural drivers of change. Our desire for personalization is, in part, a reaction to our increasingly impersonal, faceless interactions with the digital world. "Personalized" also can connote "personal," i.e., a relationship with a flesh-and-blood person. (Perhaps this is what the polymathic artist Miranda July had in mind when she created the **Somebody** app, which recruits a stranger to act as your in-person avatar, giving life to your text message with voice and emotion.)

While technology fuels our sense of alienation, it also provides the tools to fight back against being treated as interchangeable cogs in the digital machine. Why struggle with earbuds that fall out every few minutes when you can

buy a pair **custom fitted to your ear**? Or angst over badly fitted jeans that could be **tailored to your digitally scanned measurements**?

It took the **Human Genome Project** 12 years and \$2.7 billion (in 1991 dollars) to sequence the first human genome. Now companies like 23andMe offer personal genomic analysis in about a month for less than a hundred bucks.

Recommendation Engines, made possible by massive data collection and sophisticated data analytics, enable us to filter the overwhelming number of choices on the Web to something relevant and manageable. And since the underlying algorithms can learn from a user's behavior, they deliver better results the more someone interacts with them. Instead of being limited to whatever a radio station wants to play, people download Pandora or Spotify and teach the service to deliver the songs they prefer. At the same time, the spread of affordable, increasingly sophisticated software and

hardware supports the design and creation of one-off physical products. Individuals, startups and major companies are using 3D scanning, design programs and 3D printing to make **custom, personalized, fitted designs**.

As a business strategy, personalization is impelled in part by the fact that so many of the mundane services companies used to deliver can now be accomplished directly by the user, using the power of digital tools. Anyone can jump on Google and read up on general nutrition advice, but perhaps they will pay for **dietary recommendations geared to their genome**. **Research libraries**, realizing that their role as the "first place to go for scholarly content" is eroding, are starting to offer personalized search services to provide added value.

Data-driven personalization faces two big challenges. One, it's difficult to write an effective recommendation algorithm. When Netflix



Previous page: **Normal** uses “nerdalicious software” and 3D printing to create ear buds customized to the shape of an individual’s ear.

Right: The Alternative Limb Project provides personalized prosthetics that reflect the wearer’s imagination, personality and interest. Photo: Rachel Williams MUA: Katt Betts

offered \$1 million to anyone who could improve the performance of its recommendation engine by 10 percent, it took three years for someone to collect the prize. (And even that solution was soon abandoned because it was too hard to implement.) Two, a recommendation engine has to have massive amounts of data to work on before it can generate useful results. Big companies like Amazon and Netflix have so much data on user interactions that they can jumpstart the process, but achieving critical mass is a lot harder for small businesses, including nonprofit cultural organizations.

What This Means for Society

In commerce, personalization opens new economic niches, including the rise of the DIY economy—not only the sale of 3D printers, but also the use of 3D printing to create customized products. There are huge opportunities for businesses offering personalized services as well. Some companies, like the customer loyalty program **Fivestars**, encourage small businesses to pool their customer behavior data so that collectively they have enough information



to create tailored communications and offers. This enables small vendors to realize some of the advantages of scale previously confined to big retailers.

Personalization is starting to transform health care, both baseline wellness programs and interventions. **BaseHealth’s GenoPhen** provides doctors with a platform to create health plans customized to a patient’s genome, personal health history and data from quantified self monitors like Fitbit and Jawbone Up. Whereas in the past, medical treatments were designed for the “average” person (usually, in

Right: De Nieuwe Bibliotheek (The New Library) in Almere, Netherlands, creates “personal shops” for user groups defined by their “interest profiles.” Photo: Wim Ruigrok

practice, the average adult white male), now researchers are beginning to mine genomic data to identify personal risk factors and model how an individual might respond to drugs. They are experimenting with cancer treatments that target an individual's unique cancer cells.

One key characteristic of the emerging era of education is **personalized learning**. We are moving from a model in which students

are expected to conform to one-size-fits-all instruction to expecting systems to adapt to each student's learning style and interests. Last year, Vermont became the first state to **mandate personal learning plans** for all middle and high school students. Educational services like Khan Academy and ClassDojo offer tools for tracking the performance of individual students, enabling teachers to provide personalized attention and feedback. At the intersection

Museum Examples

The Yerba Buena Center for the Arts offers **YBCA:You** in which, for \$15 a month, participants are assigned their own personal art coach to help them “navigate the myriad programs and events taking place each month at YBCA and elsewhere in the Bay Area” (along with discounts, access to exclusive events and various social meet ups). One staffer **described the program as** “a little like a gym membership with a dash of case management and counseling.” A participant in the program **wrote:** “The YBCA:You program has been one of the best investments I’ve made. I feel like it’s a combination of continuing education, social hour, and life coaching—like a really good gym, but for art. I love it!”

A group of museum enthusiasts has created “**Art-o-mancy**,” an activity that turns any museum into a “personal oracle.” Participants formulate a serious question related to their life, then are blindfolded and led through the

museum by a guide. When they feel inspired to stop, the blindfold is removed and their guide helps them explore how whatever they are looking at (a painting, sculpture, even a blank wall or a fire extinguisher) sheds light on their inquiry. Art-o-mancy has been conducted at the Walker Art Center, the Minneapolis Institute of Arts and the Phillips Collection, among others.

For several years, the Rijksmuseum Amsterdam worked with Eindhoven University of Technology and the Telematica Institute to experiment with personalizing how Web users experience the museum's collections. The **CHIP project** let visitors build profiles by logging their art preferences and related cultural activities, and used this data to design personalized virtual and museum-based tours. One of the premises of CHIP was that a compelling personal experience would motivate more frequent use of the museum's online and onsite resources.

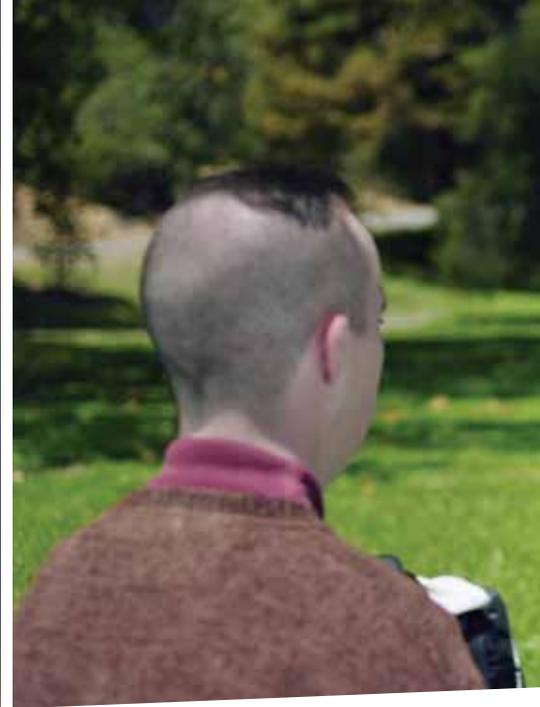




of personalized medicine and education, one body of research suggests that the efficacy of childhood interventions in socialization and learning may be **predicted by a child's genes**. But despite the potential power of such approaches, **parents are concerned** that the same data that enables schools to personalize instruction may be used to stigmatize children, or may be vulnerable to breaches of privacy.

Inevitably, personalization has a dark side as well. "Personalization" of social networks, tailored newsfeeds and search engines can create homogenous communities in which no one is challenged by countervailing views. And personalization can be misused: in November 2010, political scientists messing about with

Facebook proved that they could alter users' feeds in a way that manipulated their voting behavior. This led to **one fictional scenario**, dubbed "digital gerrymandering," in which Mark Zuckerberg personalizes the content delivered to users likely to vote against his favored candidate in a way that makes them less likely to go to the polls. "This is possible," the author notes, "on any service that personalizes what users see or the order in which they see it, and it's increasingly easy to effect." This potential for abuse challenges society to develop ethical guidelines and/or regulations that prevent companies that collect and care for personal data from using that information to advance ideological agendas.



What This Means for Museums

People are becoming accustomed to personalized service from public institutions as well as commercial companies, giving rise to some creative responses. Reference librarians at the Seattle Library offer individually tailored recommendations to patrons via the “**Your Next Five Books**” service. The **Nieuwe Bibliotheek in Almere, Netherlands**, has created “personal shops” for customer groups defined by “interest profiles.” For the library, this meant overturning traditional classification schemes to group books by area of interest, combining fiction and nonfiction, as well as training staff in marketing techniques. (The library also provides the S2M **Serendipity Machine** to encourage users to create personal profiles and connect people sharing similar interests.)

Personalized messages break through the noise of e-communications. An e-mail or text clearly geared to a user’s actions or preferences is **more likely to be opened** than generic content, and can ensure a museum’s messages to members and donors get read.

Mass personalization requires lots of data, which is a challenge for museums individually

and collectively. As museums build the technological capacity to generate personalized recommendations, they will have to convince people to contribute enough information about themselves and their preferences to jump-start the process. Many museums are just beginning to collect even basic data on how individual users interact with the organization. However, the IMLS-funded project to **pilot a version of the Dallas Museum of Art’s DMA Friends program at three other museums in the U.S.** may help the field develop systems for compiling, sharing and analyzing information about visitor participation.

Museums Might Want to...

Restructure membership programs to create relationships that respond to individual preferences, or (as with the Nieuwe Bibliotheek) learn how to assign users to groups that reflect their behavior and preference, and offer each group a meaningful set of rewards.

Consider how to customize their offerings. As Kate Tinworth asked in **a recent post on Expose Your Museum**: Who are your biggest fans and how do you involve them to create? What could customization look like in your



Several museums are official “hotspots” for Miranda July’s Somebody messaging service, including the [Portland Institute for Contemporary Art](#), the [New Museum](#), the [Walker Art Center](#) and the [Fundacion Jumex Arte Contemporaneo](#).

space? How might you balance what’s personal with what can be shared?

Tackle the “cold start” challenge of recommendation algorithms. There are several ways to approach this. To generate a big enough mass of data to detect patterns in what kind of museum user is likely to enjoy what sort of experience, museums may want to pool their data sets. Are there companies working with multiple museum clients that might integrate such functions into the services they provide? Museums can also **keep it simple**: use an individual visitor’s past interactions with the museum to suggest similar events or products they might like, rather than trying to understand, and extrapolate from, their inner psyche.

Further Reading

“What YBCA is Learning from a Personalized Museum Membership Program.” Guest post on the Museum 2.0 blog by Laurel Butler, Education and Education Specialist at Yerba Buena Center for the Arts (YBCA) in San Francisco. [Includes video.]

Personalized Museum Experience: The Rijksmuseum Use Case, Lora Aroyo, Rogier Brussee, Lloyd Rutledge, Peter Gorgels, Natalia Stash and Yiwen Wang. *Museums and the Web 2007*. This paper describes a project at the Rijksmuseum exploring aspects of personalized access to and presentation of virtual museum collections.

A Custom Fit: Personalizing Experiences Using Technology, Emily Schuster. This blog post is an extended version of an article that appeared in the May/June 2013 issue of ASTC’s *Dimensions* magazine. It shares examples of how museums are using technology—including smartphones, barcodes and radio-frequency identification (RFID) tags—to personalize the visitor experience.

“Personalization Issues for Science Museum Websites and E-learning,” Silvia Filippini-Fantoni, Jonathan P. Bowen and Teresa Numerico. In *E-learning and Virtual Science Centers*, Idea Group Publishing, Hershey, PA, 2005. Editor: Dr. Ramanathan. Subramaniam, STE, Nanyang Technological University, Singapore. (Chapter available as a free download from academia.edu.)

A Rising Tide: the changing landscape of risk

*“How do we plan for a future in
which change, and water, are the
new normal?”*

—Urban Land Institute Boston

While politicians and pundits continue to argue about climate change, nearly everyone else—including **oil companies**, the **insurance industry** and **the U.S. military**—are buckling down to deal with reality. Despite Al Gore’s **newfound optimism** about avoiding the worst consequences of climate change, we have a lot to work out. Over a century of data helps us plot the trajectory of change (in CO₂ levels, temperature, sea level) and model future ecologies, but the data can only inform our choices—they don’t give us answers. Whether and how to build, whether to move or abandon homes or whole communities, crafting the best approach to weathering storms and tides—planning on this scale will determine what cities and nations look like centuries from now, even as we deal with immediate consequences. Museums, as stewards of cultural heritage, are in it for the long term. To safeguard the artistic, historic and scientific resources they hold in trust for the public, museums need to adapt to a world where change—and water—are the new normal.

Seaside Heights, N.J., Feb. 25, 2013. An iconic symbol of Superstorm Sandy: the end of the 630-foot-long Casino Pier collapsed, causing the Jet Star roller coaster to plunge into the ocean. Photo: Steve Zumwalt/FEMA





In the last half of the 20th century, insurance underwriters could quantify and manage risk based on a century or more of data about floods, fire, drought, storm and other natural occurrences that humans deem disasters. Now the accelerating rate of climate change is making the old predictive models based on that data unreliable. Broad patterns are clear: sea levels are rising, and we know that large areas of coastal land will be inundated in coming centuries. Even the relatively conservative estimate by [the Intergovernmental Panel on Climate Change](#) forecasts the global sea level

could rise three feet by the end of this century. With a 10-foot rise in sea level, the U.S. would lose **28,000 square miles of land, currently home to 12.3 million people**; research suggests that projection could play out in the next century. Meanwhile nations, cities and states are grappling with even the modest sea level rise, coupled with increased frequency of severe storms, that we are experiencing right now.

The effects of rising seas, more frequent, violent storms and flooding due to severe



rain events are exacerbated by the fact that throughout history humans have settled by water, not just for practical reasons but because “blue space” has a **deep positive impact on our well-being**. Those patterns of settlement have been reinforced by social and economic trends that led cities, in the recent past, to reclaim abandoned industrial areas along waterfronts and uncover waterways to drive residential and retail development. These actions created short-term economic booms and helped foster high-density, resource-efficient cities, but in the long term they put more people and more real estate at risk.

Cities and states are incorporating projections of sea level rise and attendant effects into their planning—see, for example, the **extensive efforts of New York City** and the reports from many states **including California** and **Maryland**. The policy implications of these plans sometimes turn into political football, as **when North Carolina recently shortened the time frame for its sea level projections** due to an uproar from homeowners and developers about the longer-term forecasts of a 39-inch sea level rise by the end of the century (and the implications for property values). For the most part, however, policy makers, planners, designers, architects and scientists are working together to create the shape of the next century.

What This Means for Society

Cities are sinking billions of dollars into risk-proofing infrastructure (electricity, sewage, communications, public transportation) to withstand storms and flooding. But as we retrofit our cities to deal with rising tides, it's a

challenge to do so without turning cities into fortresses. And “hard” barriers like dikes, walls and floodgates are also vulnerable to catastrophic failure (as dramatized by the failure of the levees in New Orleans during Hurricane Katrina). More and more often, planners are turning to “soft” barriers and resilient design that can mitigate and tolerate flooding, rather than preventing it entirely. See, for example, the **mix of strategies envisioned for the “Big U”** in New York City, eight miles of coastline defenses that will “blend into a newly imagined string of waterfront parks.” Even after we design workable, livable ways to mitigate risk, we face the huge challenge of altering zoning and regulation to facilitate adaptive architecture and urban design.

In addition to reshaping our built environment, we need to foster resilient local networks of emergency response to help neighborhoods recover from disaster. These networks are increasingly being woven from government, NGO and corporate partners. Several cities are launching programs that **recruit sharing economy** companies to help provide housing and transportation needs in event of disaster—since peer-to-peer socially networked companies like Airbnb, Lyft and Uber can respond organically and flexibly to rapidly shifting needs. **Research conducted after Superstorm Sandy** reinforced the literature that indicates social factors like connectedness, social cohesion, trust and community bonds contribute to the ability of communities to recover from disaster. That being so, “future proofing” cities may require investing in community institutions (including museums) that foster these social bonds.

Artist Michael Pinsky used LED lights to mark the projected waterline of the year 3012 onto iconic London monuments to raise public awareness of climate change and rising sea levels. Shown here: *Plunge* mounted on Seven Dials in London. Photo: Kristian Buus

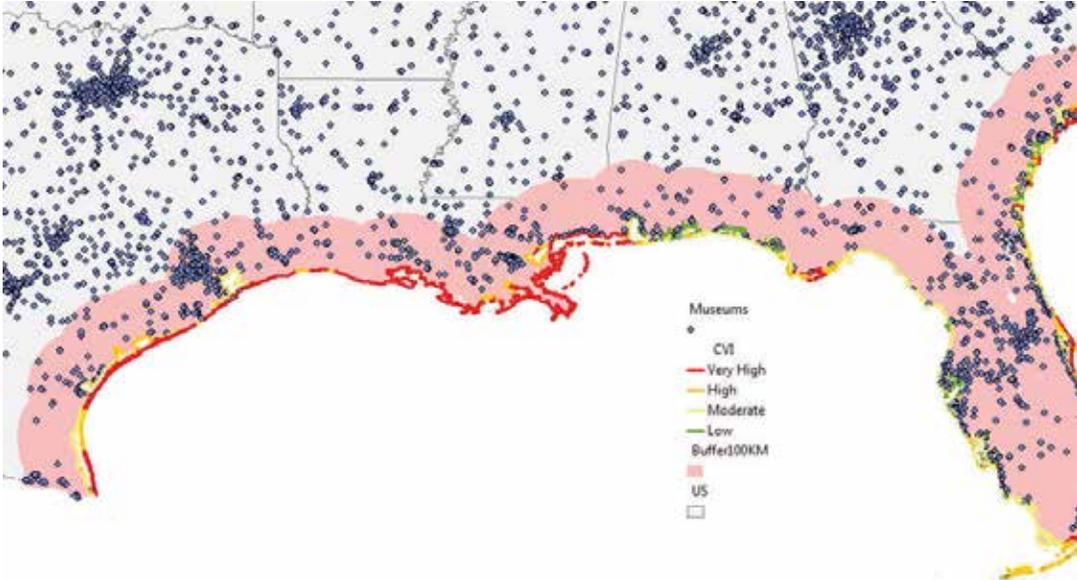
There is only so much structural or social engineering can do to prepare for the deluge. Over the next century, we will need to decide what areas to abandon (for example, by **withdrawing federal flood insurance** to discourage individual homeowners from rebuilding). In the wake of Hurricane Katrina, one geologist famously suggested **selling the French Quarter of New Orleans to Disney and moving the city 150 miles upstream**. While that rather undiplomatic suggestion went nowhere, the Crescent City may, over time, slowly shrink away from the sustained challenges and costs of repeated storms. Other communities, less tied to a particular site by history, architecture and pride, will simply pick up and move (as did **Valmeyer, Illinois**, and **New Pattonsburg, Missouri**, after the great Mississippi floods of 1993).

What This Means for Museums

Recently, at the request of the American Alliance of Museums, IMLS used data from the **Museum Universe Database File (MUDF)** to

identify museums and related organizations that lie within U.S. coastal areas. IMLS found that 34.6 percent (12,236 out of 35,364) of museums and related organizations are within 100 kilometers of the coast. Moreover, 25.2 percent of these organizations (8,927 out of 35,364) are within 100 kilometers of the coast identified as having a very high coastal vulnerability index (CVI). CVI provides a quantifiable measure that expresses the relative vulnerability of the coast to physical changes due to future sea level rise (Hammar-Klose and Thielert, 2001). CVI ranks coastal areas from low to very high based on the following criteria: tidal range, wave height, coastal slope, shoreline change, geomorphology and historical rate of relative sea level rise. In addition, there are over 90,000 individual historic properties in **the National Register of Historic Places (NRHP)**, many of which are not represented in the IMLS data set, that are also **at risk from rising sea levels**, storms, flash floods, fire and changes in the freeze/thaw cycle.

Figure shows the location of museums and related organizations along the Gulf Coast. Shaded region indicates coastal area (100 kilometers from the coast line). Segments of the coast are colored by coastal vulnerability index (see legend), which indicates the susceptibility of sea level rise. Source: Institute of Museum and Library Services

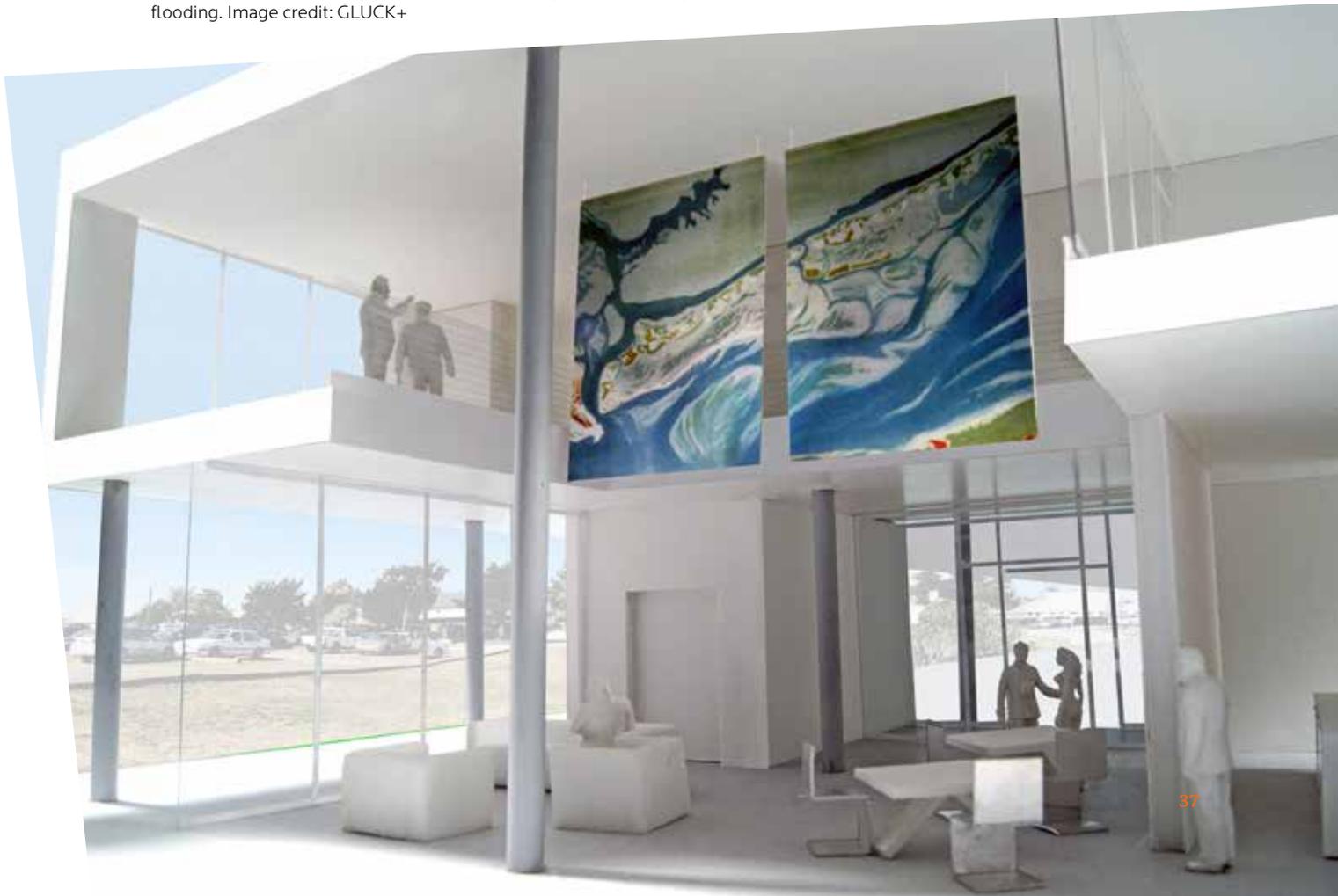


In 2009 (the most recent year for which AAM has data), the median cost of new museum construction was \$1.8 million. For organizations with annual operating expenses over \$4 million, that figure was \$6.5 million. The top quartile of art museum construction costs over \$29 million. In 2005, while the Ohr-O'Keefe Museum's new **\$45 million, Frank Gehry-designed campus** was being built, Hurricane Katrina **dumped a casino barge on the site**, crushing several buildings. When a museum large or small sinks significant resources into new construction, a cold-blooded assessment of current and future risks should inform everything from choosing a building site to selecting the elements of design.

Climate change and rising sea levels affect risk and, therefore, insurance. The insurance industry is revisiting **how it models risk** and over what period of time. This may affect what kinds of coverage museums can get, and at what price. In addition, some museums may be sited in areas that make insurance unaffordable or unavailable in future decades. At the very least, insurance companies may have much higher expectations of what a museum must do to mitigate risk.

Risks posed by climate change also affect museum field research, not just their home base. As dramatized by **Lifemapper**, an online species distribution and predictive modeling

The Orrin Pilkey Laboratory at the Duke University Marine Lab along the coast of North Carolina is designed to withstand water and hurricane-force winds, and meets LEED Gold standards. To reinforce the issue of sea level rise, critical lab equipment and experiments are located high in the building, well above future storm surge. Open collaborative commons, offices and teaching spaces on the ground floor can be cleared out in case of flooding. Image credit: GLUCK+



Museum Examples

In 2013, the Pérez Art Museum Miami opened its new \$131 million building, designed by Herzog & de Meuron, right on the Miami shoreline. It boasts some of the **largest hurricane-resistant panes** ever installed, and is sited on a “**hurricane-resistant platform**.” Even the **hanging gardens by French botanist Patrick Blanc** are billed as Category 5 hurricane resistant. (The resilience of the museum’s design is cited repeatedly in stories about the new building, no doubt because Miami is one of **the top five most vulnerable cities to a landfalling hurricane**, as well as being one of the U.S. cities **most vulnerable to severe damage from rising sea levels**.)

In 2014, the Chrysler Museum of Art **completed a \$24 million renovation**, and nearly a half-million dollars in that budget was devoted to flood resilience. Before 1982, the inlet less than 200 feet from the museum’s front steps had never flooded for more than a hundred hours in a year. By 2009, the number of flood hours exceeded 300. The renovations also included installing floodgates on the front steps, establishing salt water-tolerant landscaping, redesigning parking and rerouting the electrical systems. Since the basement had flooded three times in the past 10 years (having been dry since the museum’s founding in 1933), they also moved the heating and air conditioning systems to the top floor. In Norfolk, Virginia, where the museum is located, tides have risen over 1-1/2 feet in the previous century, and scientists at the Virginia Institute of Marine Science projected that by the end of the 21st century, local sea levels will rise by 5-1/2 feet or more, as global sea level rises and local

land sinks—which means the entire town, not just the museum, has to **consider their long-term future**.

In 2014, the National Trust for Historic Preservation (NTHP) **named the historic city of Annapolis** one of its National Treasures. Annapolis is regularly flooded by high tides, which are expected to **double in frequency by 2050**. In its announcement, NTHP said, “Annapolis was selected as a National Treasure because of its irreplaceable historic and cultural significance, as well as for the steps Annapolis is taking to protect its historic structures from the threat of increased flooding and severe weather events.” The city is creating a Cultural Resource Hazard Mitigation Plan for the Annapolis Historic District to lessen the impacts of flooding and other weather-related events on the city’s historic places. Annapolis’s museums include Water Front House, Paca House & Garden, Hammond Harwood House and the Annapolis Maritime Museum.

From 2009–2010, the P.S.1 Contemporary Art Center in New York City hosted an architects-in-residence program to **re-envision the coastlines surrounding New York Harbor**, and use “soft” resilient infrastructure to mitigate the risk from sea level rise. In 2010, the Museum of Modern Art presented the resulting designs from five interdisciplinary teams in an associated exhibition, “Rising Currents: Projects for New York’s Waterfront.” The proposed solutions encompassed sponge-like sidewalks, housing suspended over the water and turning the Gowanus canal into an oyster hatchery.

tool, many organisms will need to migrate to new locations if they are to survive. This increases the value of natural history collections—which document the historical range of species—but also challenges them to create collecting and research plans that will track these shifts in the world.

Museums Might Want to...

Study long-term risk projections for their current site, and make resilience a key factor driving renovations and new construction. This essay focuses on risks associated with water—flood, storm, sea level rise—but patterns of drought, fire, tornadoes and other climatic factors should be factored in as well.

Choose sites for new construction with an eye to relevant environmental projections. For example, some museums might decide to build outside traditional cultural districts, if locations that are ideal now may soon be vulnerable and difficult or impossible to protect. Alternatively, museums may limit how much they spend on new construction, knowing those structures may be abandoned in a relatively short time frame.

Individually or in collaboration with other museums, create offsite collections storage in areas that have lower risks, or in buildings that can be designed specifically for risk mitigation. This was considered after Hurricane Katrina devastated the Gulf coast in 2005, when museums in Louisiana banded together to plan for a joint inland storage facility for collections. While that plan did not come to fruition for various reasons, the idea was sound.

Create master plans for buildings and grounds that can be adjusted every decade to adapt to changing conditions.

Make their decisions in the context of the long-term plans of the community as a whole.

Further Reading

The Post-Sandy Initiative report, American Institute of Architects, 2013. (PDF, 44 pp.) The report summarizes recommendations for short-, medium- and long-term strategies for creating a resilient city, addressing transportation and infrastructure, housing, critical and commercial buildings, and the waterfront.

The Urban Implications of Living with Water, Urban Land Institute (ULI) Boston, 2014. (PDF, 52 pp.) This report, funded by the Kresge Foundation, arose from a conversation among over 70 experts in the fields of architecture, engineering, public policy, real estate and others. It proposes integrated solutions for future cities in an era of rising sea levels, focusing on Boston.

MitigationNation is a blog created by the National Building Museum in association with its 2014 exhibit “Designing for Disaster,” focusing on how to reduce the impact of natural disasters. The associated website includes an extensive list of “mitigation resources” organized under the headings of fire, earth(quakes), water and general (disaster preparedness).

The Future of Historic Places and Climate Change, Adam Markham. This post on the Preservation Leadership Forum Blog by the director of the Climate Impacts Initiative at the Union of Concerned Scientists addresses climate change and its impact on historic sites, structures and landscapes. <http://blog.preservationleadershipforum.org>

Hammar-Klose, and Thieler, E.R., 2001. *Coastal Vulnerability to Sea-Level Rise: A Preliminary Database for the U.S. Atlantic, Pacific, and Gulf of Mexico Coasts*. U.S. Geological Survey, Digital Data Series DDS-68, 1 CD-ROM

Wearable Tech: when “bring your own device” means shirt and shoes*

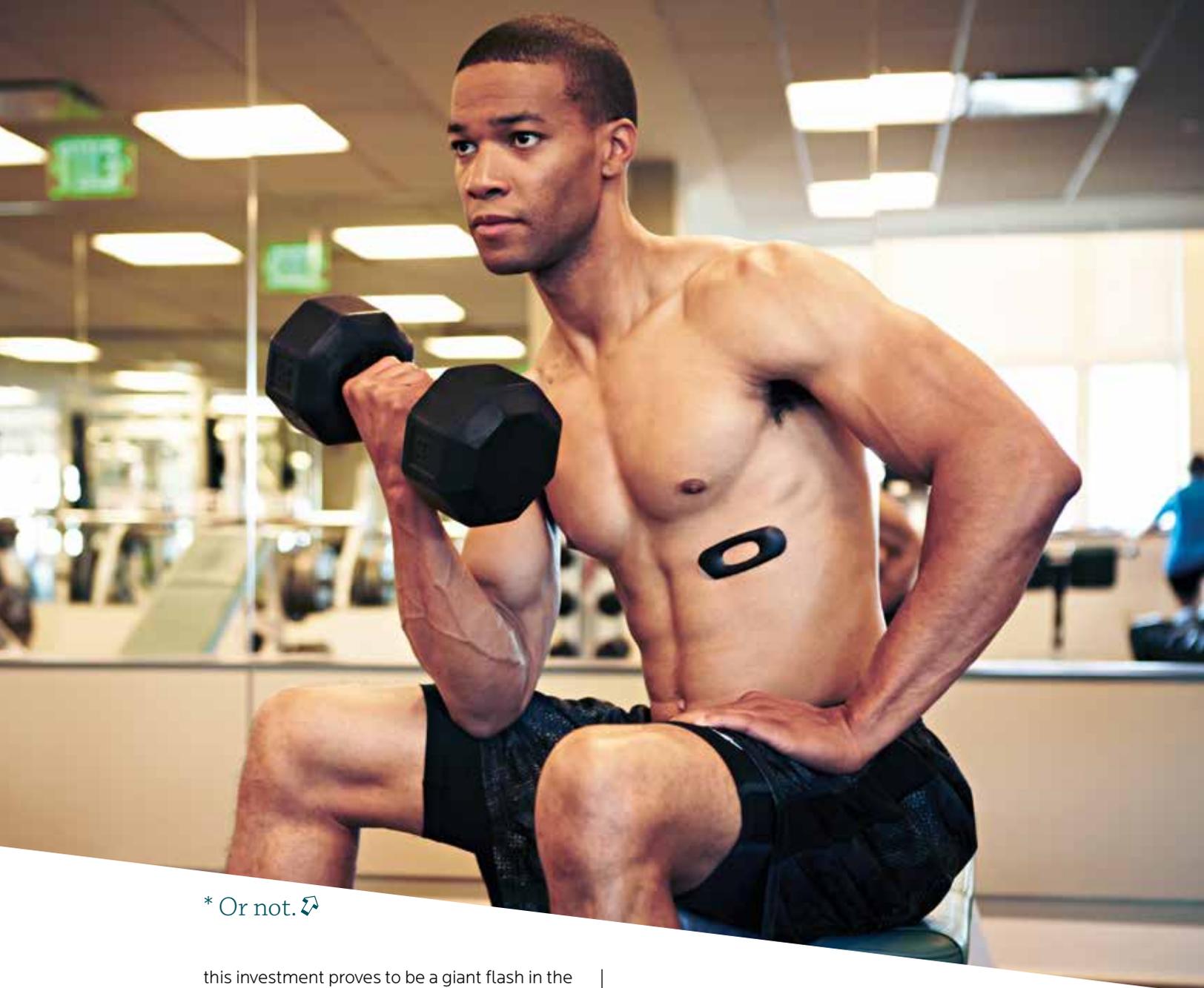
“When the Internet first emerged, no one could have conceived of the multiplicity of ways it would change our lives; solve function problems, yes, but also radically change our worldview. Wearables have this kind of potential because our bodies are our most intimate pieces of technology: they are entire ecosystems; they consume and create energy; they store and process data; they sense and communicate with their environments.”

—Amanda Parkes

Pundits declared 2014 to be the “**Year of the Wearable Technology Boom**,” as functions that currently reside in our computer, tablet or phone migrated to our body and our clothing. Wearable tech is about seamless integration, invisibility and blending technology into everyday life. Tech is a wearable win when it becomes an unremarkable part of what we put on each morning. What that technology *does* is all over the map. Many wearable devices currently focus on biometric analysis (medical data, quantified self, life-logging), but more broadly, “wearables” can integrate any technology (social media, communications,

data analytics) onto and into our bodies. The creativity and attention being lavished on hand-held mobile technology may migrate, with time, into wearable tech. And as it does, technology that used to be something we had to pick up, turn on and remember to take with us will become psychologically integrated into our physical self.

In **2013, investors poured \$458 million into wearable companies**; in 2014, the market was valued at \$5.26 billion; and by 2018, projections of wearable tech in the market range from **130 to 180 million devices**. Whether



* Or not. ↻

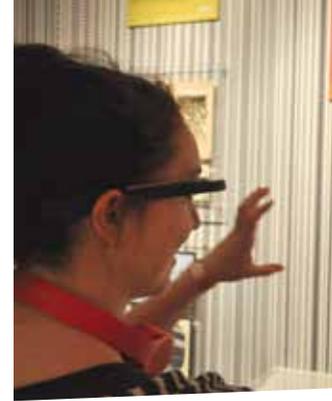
this investment proves to be a giant flash in the pan or the start of the next big thing depends on whether wearables prove themselves to be superior to their hand-held competitors.

The first great challenge for wearable technologies is justifying their existence by doing something your smartphone can't, or doing it better. In addition to freeing up your hands, some wearables provide a heads-up display (layering data over a user's normal field of vision), some push data to or from a wristband, some live on your skin or in prosthetic devices, others weave themselves (literally) into mundane items of clothing. See, for example, the Ralph Lauren-designed **biomonitoring t-shirts** worn by the

The AmpStrip™ is an unobtrusive, Bluetooth-enabled heart-rate monitor designed for 24/7 use by athletes.

ball boys at the 2014 U.S. Tennis Open. This kind of integration is facilitated by the development of electronic materials that can be **stretched, folded, woven and washed.**

In addition to collecting data from your body and surroundings, well-designed wearables can provide a graceful, less obtrusive (read, less rude) way of monitoring your various data streams, including e-mail, without staring at your phone.



Bard Graduate Center Google Glass Exhibition Interpretation Pilot Project. Photos: Raffi Asdourian

One of the best examples of wearable tech in search of a function is Google Glass, a heads-up, hands-off display that enables the wearer to take photos or videos, search for information, track reservations, make calls, send messages, share content and more, using a combination of voice and touch commands. Google is currently paying particular attention to Glass's potential **applications in health care, construction and manufacturing**, where hands-free information is a valuable work tool. In other circumstances, a less expensive, if less cool, piece of tech such as a head-mounted Go-Pro Camera might accomplish the same thing (for example, taking first-person video of unfolding events). Whether **or not** Glass per se becomes the next ubiquitous personal tech accessory, there are many **competing products in development**—wearable tech in general (and doubtless some form of hands-off headset) is part of our future.

Sometimes wearable tech is about making a specific technology less intrusive: such as a wristwatch that lets you **sneak peeks at your e-mail**, a game controller **built into a glove** or a small clip-on camera that automatically **generates a photostream of your life**. Sometimes

engineers seem to be vying to see how many functions they can jam into a given piece of apparel: Can a necklace consist of **a light display that responds to your movements and ambient noise**? If you are going to wear a smartwatch, can you engineer it to **predict and display upcoming events**? Why can't your **shoes vibrate** to tell you where to go? Or **create a new form of notation for dance** (a notoriously difficult challenge)?

Many of these functions may seem frivolous, but wearable technology is having a profound impact on health care. Wearables can transform medical monitoring into an unobtrusive, portable, personal, always-on function. At the most basic level, the plethora of personal fitness monitoring bands and tags that collect data on movement, sleep and (for some) temperature and pulse, generate data that can be shared with health care providers. **Epidermal electronic** skin patches can monitor biometric data, and paired with diagnostic algorithms may be able to deliver appropriately calibrated drugs (such research is currently being targeted





at Parkinson's and other movement disorders). The **Embrace smartwatch** can detect the warning signs of an epileptic seizure. Google's **nanoparticle-covered pill** pairs with wearable magnets on the skin to detect cancer.

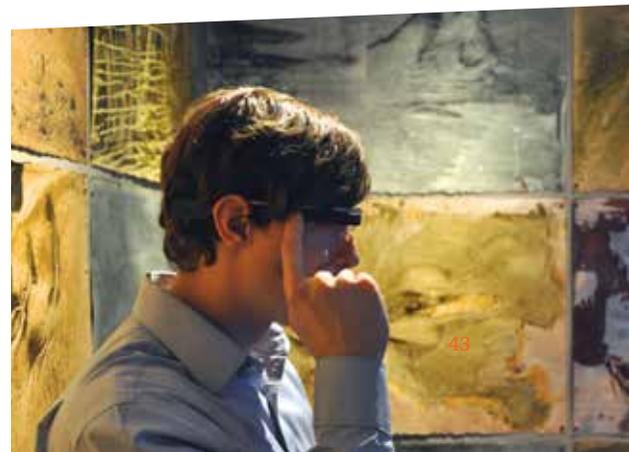
Wearables may transform other fields as well. Consider how wearables could empower citizen journalism, thwart censorship and monitor the actions of police if we can **turn people into walking news collection devices**. And the data flowing to and from wearables is going to rock advertising, social media and retail: the research firm Gartner predicts that by 2020, consumer **data from wearable technology will drive 5 percent of sales from the global 1000 firms**.

What This Means for Society

The rise of wearable technology may finally drive diversity in the notoriously white, male tech sector. While most wearables are marketed as “unisex,” what that usually means in practice is “**designed for men**.” But the tech industry is discovering that “**one size does not fit all**”—a device that is part of a person's wardrobe has to take into account gender,

size, body type and skin color. And a diverse group of designers is more likely to meet the needs of diverse users. **Isabelle Olsson**, whom Google drafted to serve as the lead designer of Glass, makes a point of noting that the Glass design team splits about 50/50 male/female, as opposed to the **70 percent male Google workforce** overall. Some commentators note that many of the functions of wearable tech, particularly fitness tracking, can be consolidated into that Swiss Army knife of technology, the smartphone. That being so, the dedicated, long-term users of separate monitors designed to live on the wrist or on a necklace may be women, who are less likely to carry their smartphone in a pocket. That, in turn, drives gender diversity by **bringing together the worlds of tech and fashion** to produce wearables that appeal to a mainstream audience.

Wearables may reshape the workplace as employers use them to measure and tweak performance (including athletic performance on **sports teams**) or **track productivity and improve performance**. Some companies, including BP and eBay, encourage employees to wear fitness monitoring devices, and



sometimes offer discounts on health insurance in return. Other **employers may ban wearables**, or at least create stringent policies governing their use, because the devices may pose a security risk or inadvertently create records that are subject to retention rules or vulnerable to subpoena.

Wearable tech may prove to be a boon for accessibility. Devices like Glass can integrate visual recognition, location-aware information and wayfinding into everyday life. And wearable tech can **destigmatize assistive devices**, as well as enhance their functionality, by making them either cool or inconspicuous. There is a growing list of must-try **wearable tech for people with disabilities**, including a variety of heads-up devices that turn visually recognized text to audio. One teenager with severely compromised vision recently discovered that **Google Glass expands his visual field by 70 percent**, enabling him to resume his ballet practice. Wearable tech also encompasses increasingly sophisticated prostheses that offer enhanced functionality, or fashion-forward design. Imagine, for example, a **prosthetic arm and hand for a chef** that is touch and temperature sensitive, measures the pH of foods and holds onto slippery foods with suction cups. (OK, that one is just a concept, but engineers are working on it.) In any case, the potential for wearables to enhance accessibility challenges designers to make such devices barrier free.

As with any new technology, society is playing catch-up when it comes to drawing appropriate boundaries around the use of wearables. In 2014, 59 percent of respondents to a **Pricewaterhousecoopers survey** had

concerns about integrating wearable tech into everyday life that ranged from security breaches to “making everyone look ridiculous.” This may simply reflect the caution provoked by any new technology, but some industries have specific concerns: last year the Motion Picture Association of America and the National Association of Theatre Owners **made it clear** that patrons refusing to put away wearable recording devices may be booted from the premises. Google is already playing defense against **measures proposed in three states** to impose restrictions on driving with headsets like Glass. And data from the personal monitors people choose to wear may feed into the growing reach of digital surveillance: last year lawyers in Canada working on a personal injury suit **used data from their client’s Fitbit** to help make her case. What happens when prosecutors start to tap this source of evidence?

What This Means for Museums

Wearable technology is a logical extension of BYOD (Bring Your Own Device). Museums are already taking advantage of the fact that many, if not most, visitors enter the building with a hand-held device (notably smartphones or tablets) that can deliver interpretive content. As Glass or its kin take hold, museums should ensure that their content works on these emerging platforms as well. Some wearables may open up the potential for types of interpretation not offered by hand-held tech.

Practitioners such as independent consultant **Mar Dixon** and **Neal Stimler** at the Metropolitan Museum of Art are exploring how wearable tech can help museums with their

own work. Can heads-up, hands-off recording devices like Glass help **conservators and preparators**, as well as artists such as **Gretchen Andrus Andrew**, document their work? Could GPS-connected biomonitors help ensure the safety of researchers working in remote and dangerous sites? (Shades of Star Trek away teams....) Can museums recruit the major players in the fitness tracking industry (Fitbit, Jawbone, etc.) to help measure **the biometrics of cultural engagement**?

Wearables strengthen the case for museums providing open, remixable content for private and commercial use. This will encourage the development of applications for wearable tech

by entrepreneurs working outside museums (many of which lack the expertise, resources and staff to do such work in house).

Wearable tech creates yet another challenge for conservation. In 2013, David Datuna created the first public artwork designed to be viewed with Google Glass: **Portrait of America**, which debuted at Art Basel in Miami. As Glass's software evolves (or eventually is retired), Datuna's work will pose yet another technological challenge to museums collecting digital artifacts. How can we ensure that a work like this is viewable in 10, 20, 100 years?

Museum Examples

Several museums are experimenting with Google Glass, including the **Bard Graduate Center Gallery** and the **de Young Museum**—Glass can use visual recognition to trigger content appropriate to whatever painting a viewer is looking at. The **Manchester Metropolitan University (MMU)** experimented with using the device to deliver interpretive content at the Manchester Art Gallery, and hopes in the future to provide Glassware that will recommend, and guide the user to, similar works.

The Tech Museum of Innovation in San Jose, California, opened an exhibit in 2014, "**Body Metrics**," that explores the applications of wearable tech to health and well-being. Visitors

are equipped with three wearable devices, enabling them to collect and manipulate their own biometric data while participating in activities throughout the museum.

Last year the Powerhouse Museum hosted Sydney Design 2014, which included a workshop exploring the **research applications of wearable technology**. The participants—user experience designers, developers, educators, museum and gallery curators, and fashion designers—created conceptual designs for wearable tech that would help gather data on four hypothetical users: a foreign correspondent in Iran, a sex worker in Sydney, an Olympic diver and a person with Parkinson's disease.



Museums Might Want to...

Develop proactive policies regarding use of wearable tech by visitors and by staff. Are there areas of the museum, or events (such as staff meetings or public lectures), where wearables may be banned, due to concerns about covert recording?

Monitor the wearable technologies used by visitors, and be prepared to integrate them into BYOD delivery of content and experiences. Support the use of wearables (as well as

hand-held devices) by providing free Wi-Fi and charging stations. Explore (with permission, of course!) how data from personal biomonitors devices might be integrated with indoor GPS to track how visitors experience the museum physiologically and psychologically.

If the museum has created content or experiences that can only be accessed via wearable technology, consider having devices available for loan to visitors who don't bring their own. This would help bridge the "digital divide" and ensure that all visitors have access to what the museum offers.



New parents may be reassured by the data on temperature, activity, respiration and sleep quality provided by the Mimo wearable baby monitor and associated app.

Seek out artists and technologists experimenting with wearable tech. Their work may help museum visitors learn about emerging technology and consider the implications for their own lives. They may also help museums explore how wearable tech can be put to work in service of the museum's goals.

Further Reading

The Creators Project, *Make it Wearable* | **The Concepts** is an Intel video series on wearable technologies. The series includes installments on sleep hacking (inducing lucid dreaming through wearable tech), jackets that turn dance into music and biotech nail treatments.

Re-collection: Art, New Media, and Social Memory, Richard Rinehart and Jon Ippolito. While not about wearable technology per se, this book looks at the challenge presented by emerging technologies to how we document and preserve art based on new media. <http://re-collection.net/>

Neal Stimler blogs for the Metropolitan Museum of Art on his experiences using Glass in museums, and you can find his posts at **Digital Underground** tagged googleglass and metthroughglass.



Sloooow: better a tortoise than a hare

*“Anything worth doing is
worth doing slowly.”*

—Mae West

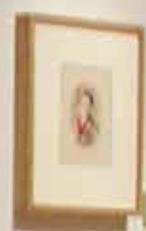
In the past few decades, there’s been a growing awareness that while “fast” may look efficient, in the end it may not be effective. The Slow Movement, composed of distributed, disaggregated individuals and groups advocating similar principles across a range of sectors, represents a cultural shift towards a slower pace of life. It came to world attention in the 1980s when Carlo Petrini founded the Slow Food movement in Italy (now it is international), in large part to fight globalization of food and agriculture and the destruction of local economies and traditions. Now (ironically) the movement is gathering speed, and “slow” is being applied as a business strategy and life philosophy to everything from food to travel to health care, as we rediscover that doing something quickly doesn’t always mean doing it right.

In 2013, the Peabody Essex Museum was one of over 200 museums participating in Slow Art Day. Shown here: *Geisha: Beyond the Painted Smile*, Courtesy of the Peabody Essex Museum, Salem, Massachusetts.





Small informational placards on the wall next to the large painting.



Where Do Your Flowers Come From?

Currently, the U.S. imports around 80% of flowers sold. With the support of consumers, American flower farms could be filling many more vases across the country.

74%
of consumers don't know the origins of their flowers

58%
of consumers would prefer American Grown, if given a choice

58%
of U.S. flower farms have gone out of business since 1992 mostly due to low-cost imports.

Flower Farmers Flower farms, large and small, are located in all 50 states. Mostly family owned, they use many sustainable practices to grow thousands of beautiful varieties to supply the distribution channels of the floral industry.

Wholesalers Many wholesalers purchase flowers globally in a marketplace, where country-of-origin labeling is not required or enforced. Some wholesalers source from domestic flower farms, but the majority do not.

Grocers Grocery stores and supermarkets purchase large quantities of flowers by the bunch or in mixed bouquets. They typically source from wholesalers, although some import flowers directly. Some also source flowers from U.S. flower farms.

E-commerce Most large online floral retailers buy directly from South American farms and ship those bouquets to U.S. consumers. Others act as the marketing middleman for florists who fulfill orders with freshly imported flowers.

Florists Florists purchase flowers and greens from wholesalers and flower farms. Only those who buy directly from U.S. flower farms or from wholesalers who label the source of flowers can honestly tell customers where their flowers were grown.

YOU: the floral consumer

Flower Power

The floral market is booming! U.S. flower farms can meet the demand and supply an increasing market of consumers who care about American Grown blooms.

There are approximately 1,300 flower and foliage farms in the U.S., large and small, located in all 50 states. These farms use many sustainable practices to grow thousands of fresh, seasonal, unique and fragrant varieties.

Big Money
\$7-\$8 billion

Retail Value of U.S. Cut Flower Purchases

America's Cut
\$496.2 million

Retail Value of Fresh Cut American Grown Flowers & Foliage



80% of flowers are imported		20% are grown in America	
Colombia	68%	California	78%
Ecuador	17%	Washington	6%
Netherlands	5%	New Jersey	4%
Canada	4%	Oregon	4%
Other countries	9%	Hawaii	3%
		North Carolina	2%
		Florida	1%
		Other States	2%

TOP 6 IMPORTED CUT FLOWERS BY STEM

Roses	1.6 Billion
Carnations	552.9 Million
Pom Pom Mums	343.5 Million
Lilies	286.9 Million
Mini Carnations	200.2 Million
Chrysanthemums	132.2 Million

Imported Flowers

Miami International Airport handles **91%** of the fresh flowers imported per year

200,132 TONS of flowers land in Miami each year

40,000 boxes of flowers ARRIVE DAILY

During the weeks of Valentine's Day and Mother's Day

80,000-120,000 boxes of flowers ARRIVE DAILY

That Equals:

SEVEN Daily Flights SIX Days per Week



Imported Bouquets
Mixed Bouquets 691 Million
Rose Bouquets 310.5 Million
Valentine's Day Roses
224 Million Roses Sold in 2012
Only 2% were American Grown

Over **1.6 billion** stems of roses are imported annually into the United States. That is in stark contrast to our country's domestic production as just over **30 million** stems per year.

Why Buy American-Grown Flowers?

You support local jobs and the economy.

Your flowers create a smaller transportation footprint.

You help preserve farmland in all 50 states.

You know the source of your purchases through honesty and transparency in flower labeling.

You connect with farmers and their flowers.

You promote more sustainable and environmentally-sound practices.



How can you help?

Ask your florist, grocer or wholesaler to supply American Grown flowers.

Look for origin-specific labels, including Certified American Grown, state-grown producer labels, and the "I pledge allegiance to American Flowers" badge.



CHECK OUT THESE RESOURCES:

slowflowers.com • americangrownflowers.org
fieldtovase.com • acfg.org • ccdi.org
Visit slowflowers.com/poster/poster.html for sources to data quoted here

© slowflowers.com LLC • Infographic Design: Marisa Medina

Brought to you by

Slow Flowers

Be intentional in the way you shop.

Debra Prinzing of SlowFlowers.com created this infographic to educate consumers and florists about the source of their flowers.

Technology is being widely blamed for shortening our attention span. The median length of a book is **64,000 words**; the optimal length for a blog post is **1,600 words** (which takes **7 minutes to read**); tweets are capped at 140 characters, but do even better if they slim down to **a mere 100**. The site **Long Reads** was founded to push back against the ultra-short form of typical Web content. (And if you don't have that kind of time, you can compromise with the blog platform **Medium**.) **Slow Reading clubs** bring people together to provide mutual support of simply curling up in a cozy chair for an hour of sustained attention. We even have **Slow TV**:

in one example, 1.3 million people watched 4 hours of people talking about knitting, then 8-1/2 hours of actual knitting, during Norway Public Television's "National Knitting Evening."

Slowing down takes conscious effort because our internal clocks have been reset by over a century of technological advances aimed at doing things faster. In 1873 Jules Verne envisioned Phileas Fogg speeding around the world in 80 days by rail and steamship. Now engineers are working on **hypersonic aircraft** that could make the trip in 6 hours. The acceleration of travel is eclipsed by the speed

of communications, which, on earth, is near instantaneous. (Even sending messages to the Philae lander, as it hurtled towards Comet 67P, 673 million kilometers from the sun, took only 28 minutes.) But there is growing awareness that speed comes at a cost. A **2012 study by Pew Research** showed that 87 percent of teachers feel technology is creating an “easily distracted generation with short attention spans.” At the same time we are beginning to document that “slow” has health benefits—for example, **increasing well-being and reducing stress in children**.

This realization is leading to changes in a whole slew of sectors as people strive to apply a slow approach to improve quality of life and capitalize on new business opportunities. **Slow Medicine** seeks to redress what’s been lost in a health care system that gives a doctor **15 minutes to see a patient** and no financial incentive to talk things out. **Slow Travel** encourages people to connect with their surroundings and local culture, sometimes through literally traveling slowly (e.g., **via a canal barge**), or engaging in inherently slow activities like cooking or truffle hunting. At the extreme of slow travel is Luis Simoes, who is taking **five years to travel the world**, documenting the trip by sketching. Two years into the journey, he has visited 29 countries and filled around twenty 60-page sketchbooks. Says Simoes, “With this slow travel I feel I can connect with people, cities much more intimately.”

A lot of “slow” is also about creating healthy, sustainable systems. In 2013, the **Vermont Sail Freight Project** kicked off, aiming to reopen a historic trade route between Vermont and

New York State to deliver local food without using oil, reducing the carbon footprint of transportation. **Slow Flowers** was founded to reduce “flower miles” by connecting buyers with local sources. The **gloss is even off fast food**, as sales of McDonalds fell 3.3 percent in the last quarter of 2014. Parents are being pressured to make time to make sure kids **sit down to family meals**, which have been shown to reduce truancy, obesity and drug use, and improve academic performance. The **Cittaslow** (slow cities) movement, which, like Slow Food, started in Italy and now has **three accredited cities in the U.S.**, is dedicated to improving the quality of life in towns by slowing down the overall pace.

There is a long tradition of Slow Art, but it is being revised and refreshed in imaginative ways. In a world where many buyers choose instantaneous one-click delivery to their Kindle reader, Scottish artist Katie Paterson has unveiled the **Future Library** project: commissioning 100 stories, one per year, that will only be printed and read when a forest Paterson’s team planted in 2014 matures and is harvested, pulped and turned into paper a century from now. Or Slow Art may co-opt technology, as in Rob and Nick Carter’s **Transforming Still Life Painting** (2012), an animated interpretation of Ambrosius Bosschaert’s *Vase with Flowers in a Window* (1618), which consists of a looping, 3-hour animation that simulates the passage of time.

What This Means for Society

Sometimes we forget that technology doesn’t dictate the future—it simply presents us with choices. Society has to decide how and when to apply any technological innovation, and when





to consciously push back against undesirable side effects. We may need to develop **Slow Design Principles** to help us create places and products that foster deeper engagement with places, experiences and each other.

Many of the benefits of “fast” are easy to quantify, particularly the economic gains, while many of the costs are “externalities”—adverse effects that go more or less unseen, and are not factored into the price of cheap, fast goods and services. Fast food leaves society shouldering the costs of obesity and its attendant health effects. Fast (i.e., mainstream) fashion degrades the ecology by diverting limited water supplies to crops unsuited to their climates, fosters abusive labor practices, and contributes to the waste stream by producing goods and fads that don’t last. We need to create systems of pricing or at least of scoring goods that make these costs explicit. Then “slow” may be able to compete on overall cost as well.

Fostering a slower, more thoughtful pace of life may mean re-engineering our cities. **Walkable cities** consistently score higher on quality of life than cities designed solely around cars. Cities may deploy design principles like **shared space** to slow traffic and encourage people to linger at shops, restaurants and museums. The **principles of New Urbanism** emphasize quality of life over “efficiency,” and in that spirit, may **encourage city planners to use public art** as one way of tempering the pace of urban life.

Artist Katie Paterson has planted 1,000 trees for the **Future Library** project, which will unfold over the next 100 years.

Museum Examples

The Jane Addams Hull-House (JAHH) **Slow Museums Project** re-envisioned the museum as “a site of recreation, reflection and respite.” An Innovation Lab for Museums grant from the Met Life Foundation enabled Hull-House staff to consider a variety of approaches, culminating in the **Porch Project**, which involved radical teach-ins on Chicago’s **grass gap**, a yoga and art-making infused workshop on reimagining community safety and policing, a slow food cookout featuring **subversive female cooks** from Belize and Nicaragua, and storytelling and art installation about community sex education with the **Illinois Caucus for Adolescent Health**. JAHH’s approach to slowness went beyond intentionality and sustainability to incorporate notions of resistance based on their internal **Slowness Principles**.

Slow can also mean ethical and sustainable. In 2013, the Paris Cultural Center welcomed four **sheep-in-residence** outside the Paris Archives to provide quiet, ecofriendly lawn care (a project they dubbed an “eco-mowing scheme.”) By replacing lawnmowers, the sheep not only reduced the lawn’s carbon hoofprint, they eliminated the noise pollution of commercial lawnmowers.

Many museums engage in projects promoting and highlighting slow culture. The Cooper-Hewitt hosted **Natalie Chanin**, one of the founders of the slow fashion movement, for a three-day residency followed by a two-day design workshop for teens. The first Slow Art Day, in 2009, had 16 museums beta-testing the experience. By 2012, this had soared to 101 venues and as this report goes to press, 28 venues are already signed up for 2015.

What This Means for Museums

As with the growing desire to periodically disconnect from the digital world (which we discussed in *TrendsWatch 2013*), the slow culture movement presents the opportunity for museums to position themselves as refuges from an often overwhelming world. But:

Our field needs to grapple with what it takes to create slow experiences. Sometimes museums wrongly assume that “slow” is simply part of their DNA. A **notorious study** of visitors in

the Metropolitan Museum of Art published in 2001 reported that the average time spent viewing a work of art was 27.2 seconds. A **more recent study** at the Indianapolis Museum of Art found median viewing times of 4–31 seconds at different installations. It takes conscious and thoughtful work to create slow engagement, with or without technological mediation.

Different audiences will want to engage with the museum at different speeds. Online, museums can accommodate both browsers

and contemplators without causing traffic jams. One guy may spend 100 hours, over the course of three years, **looking at the digital image of a Modrian**, while someone else flips through the virtual gallery. But the rare visitor who tries to spend 30 minutes with the Mona Lisa comes off as looking “**eccentric, verging on the insane**” as the crowds rush by. As the world bifurcates into fast and slow lanes, museums will have to find temporal or spatial ways to accommodate different paces.

Museums Might Want to...

Establish a baseline. How much time do visitors spend in the galleries, and what is the average and the range? What spaces, or individual collections objects, support the longest dwell-times? How are visitors' reported satisfaction, mood and learning outcomes influenced (or not) by the length of engagement with an object or exhibit?

Develop and test strategies to foster slow experiences. Sometimes these methods may be low- or no-tech, human-mediated interactions. Museums might, for example, steal a page from the **Human Library**, which gives visitors the opportunity to “borrow” a person for a half hour or so of dialogue and interaction. It's one thing to blow past a painting (or abandon a book), but it's harder to walk away from a human being looking you in the eye.

Participate in **Slow Art Day**—one day each spring (it will be on April 11 in 2015) when people are encouraged to visit local museums and galleries to look at art slowly, select five works to ponder for 10 minutes each and then discuss over lunch.

Further Reading

In Praise of Slowness, Carl Honore, Harper Collins, 2009. An overview of the global Slow movements in various sectors.

Slow Food Revolution, Carlo Petrini, Rizzoli, 2006. A history of the Slow Food revolution by the man who built the movement into a global force.

The World Institute of Slowness. A think tank founded in 1999, the institute provides consulting services as well as promoting slow products and brands. Their blog highlights developments in “slow” in a variety of sectors, including research.

The International Institute of Not Doing Much, dedicated to “sophisticated life in the slow lane.” Distributors of the Slow Manifesto and tireless promoters of Slowsophy. Extremely strange, hopefully tongue in cheek, but fun.

Where to Find the Future

Most of CFM's content is available free over the Web.

CFM's page on the Alliance website (futureofmuseums.org) includes links to all of our projects and reports.

The CFM Blog (futureofmuseums.blogspot.com/) features a mix of essays by CFM's director, guest posts, recommended reading and viewing, and commentary on current news. The trends featured in this report will be explored in more depth on the blog throughout 2015.

CFM's free weekly e-newsletter, *Dispatches from the Future of Museums*, contains summaries of and links to a dozen or so news items about trends, projections, museum innovations and tools for the future. You can find the newsletter archive and subscription link at multibriefs.com/briefs/aam/.

You can follow CFM on Twitter (@futureofmuseums), where our tweets feature links to news, research, opportunities and current events.

On Pinterest (pinterest.com/futureofmuseums/), CFM's boards are devoted to images illustrating the trends we follow, recommended reading and viewing, and glimpses of potential futures.

CFM's Facebook page (facebook.com/futureofmuseums) shares links and brief commentary on stories related to museums.

CFM's YouTube channel (youtube.com/futureofmuseums) hosts interviews with museum professionals around the world as well as recordings and screencasts of talks by CFM staff, while our "Favorites" list is a compilation of futures-related videos from a wide variety of sources.

Author Credit

Elizabeth E. Merritt is founding director of the American Alliance of Museums' Center for the Future of Museums. After working through infatuations with ethology (the study of animal behavior), ecology and evolutionary biology, she earned an M.A. in cell and molecular biology at Duke University. However, after dissecting her thousand and nth embryonic chick eyeball, Merritt reconsidered her career path and concluded that the best job in the world would be working in a museum. She bombed her first museum interview (for the position of penguin keeper at the New England Aquarium) but landed a job as curator of a small children's museum-cum-nature-center. Participating in the Collections Care Pilot Training Program, hosted by the Los Angeles County Museum of Natural History, gave her the street cred to become a collections manager at a natural history museum. Later, while serving as director of collections and research at Cincinnati Museum Center, Merritt attended the Getty's Museum Management Institute. As is often the case with graduates of that august program, she changed jobs within a year of completing the course, leaping to the association world to direct the Museum Assessment Program for AAM. Eventually she became director of the Excellence programs at the Alliance, including MAP, Accreditation, the Museum Assessment Program, peer review and the Information Center. In 2006 the Alliance Board approved the creation of a futurist initiative as one of the AAM Centennial projects, and Merritt hastened off to Texas to complete the University of Houston's certificate course in Strategic Foresight.

Her areas of expertise include strategic foresight, museum standards and best practices, ethics, collections management and planning, and assessment of nonprofit performance. Her books include *National Standards and Best Practices for U.S. Museums* and the *AAM Guide to Collections Planning*. She blogs for CFM at futureofmuseums.blogspot.com and tweets as @futureofmuseums.

About Us

The Alliance's Center for the Future of Museums (CFM) helps museums explore the cultural, political and economic challenges facing society and devise strategies to shape a better tomorrow. CFM is a think tank and R & D lab for fostering creativity and helping museums transcend traditional boundaries to serve society in new ways. For more information, visit futureofmuseums.org.

The American Alliance of Museums has been bringing museums together since 1906, helping to develop standards and best practices, gathering and sharing knowledge, and providing advocacy on issues of concern to the entire museum community. With more than 21,000 individual, institutional and corporate members, the Alliance is dedicated to ensuring that museums remain a vital part of the American landscape, connecting people with the greatest achievements of the human experience, past, present and future. For more information, visit aam-us.org.

Acknowledgements

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Image and permissions research by **Sylvea Hollis**.

Cover: *Ark Hotel*, copyright Remistudio

This self-contained, floatable biosphere was conceived as a resilient response to flooding caused by rising sea levels. When seated on dry land, it is engineered to be earthquake resistant as well. When storms sweep in, it can take to the sea. The Ark's independent life-support system includes solar panels, rainwater collection and passive thermal heating. Its prefabricated frame facilitates rapid construction. Ark Hotel was designed in conjunction with the International Union of Architects, Architecture for Disaster Relief program.



**American
Alliance of
Museums**

Help us keep an eye on the future

TrendsWatch and other Center for the Future of Museums activities are supported by American Alliance of Museums member dues and donations. If this report sparked your thinking and you would like to see *TrendsWatch* prosper, please consider supporting the Alliance by joining or making a tax-deductible contribution. The Alliance is committed to helping museums succeed and making the case that museums are essential in our communities. We welcome your investment in our shared future.

Join or donate online at aam-us.org/ or by calling 866-226-2150.

Corporate and foundation support are also welcome. To learn more, contact Brent Mundt, vice president of development, at bmundt@aam-us.org or 202-289-9101.