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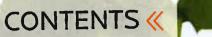




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34 SEA CHANGE

Innovation transforms the link between museums and water. BY SARAH SUTTON BROPHY and ELIZABETH WYLIE

42 HOMECOMING

Shedd Aquarium refocuses on its native Great Lakes.
BY ELAINE FERRIER

48
SOMETHING OLD,
SOMETHING NEW

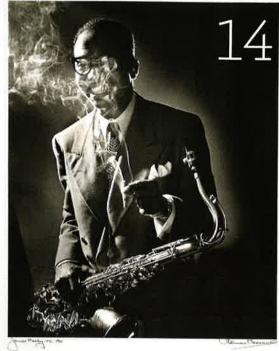
Green investments pay off for the historic Toledo Museum of Art.

BY STEPHANIE MILLER

The Indianapolis Museum of Art stewards a lake, woodlands, wetlands and meadows in its 100 Acres site. See p. 34.

>> CONTENTS







DEPARTMENTS

- 7 From the President
 The Alliance marks an important anniversary.
- 8 In Box
- 9 By the Numbers
- 10 **Débuts**New exhibits, construction and acquisitions.
- 17 What's New Items of note from the field.

18 Information Please
Protecting the multimedia
museum's intellectual property.

22 My Take

Free admission can grow—and reprioritize—the museum.

26 Inside View
A discovery triggers an odyssey at a historic house museum.

- 30 Advocate Story First in a series.
- 54 Advertiser Guide/ Photo Credits
- 56 MuseumExpo Product Preview Guide
- 61 Alliance Community

 Accreditation People IMLS •
 Charitable Giving
- 64 Showcase

18



Cover: Green sunfish and blue gill at Shedd Aquarium. See p. 42.

TAKIYA

After an impressive renovation and restoration of its 125 year old building, the Rijiksmuseum re-opened its doors in April of this year. Throughout the new Rijksmuseum; hardware designed and manufactured by TAKIYA. From picture rail and hangers to D-rings and wall hooks - Rembrandt, Vermeer, and Steen all depend on TAKIYA.

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Image Courtesy of Rijksmuseum Amsterdam, Photo by Iwan Baan.



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Standard Bearers

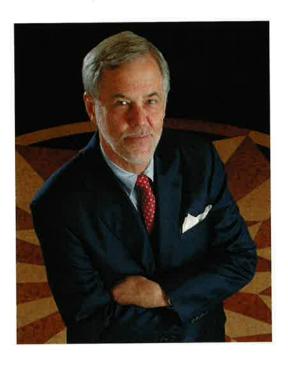
AT AAM, WE PERFORM MANY SERVICES on behalf of the museum field, but none is more important to us than our role in promoting the broad embrace of standards and best practices. While these are "American" standards, in keeping with our first name, they are widely admired by, and emulated by, museums around the world. Only one of the AAM Press books, Standards and Best Practices for US Museums, has been translated into three languages in response to international demand.

I have learned that people outside of the museum field sometimes have a hard time understanding why those standards are so important, and I have often been asked why a museum would take the trouble to become accredited, given that it is completely voluntary. Yet, the fact that we are a self-regulated "industry," with a demonstrated commitment to the highest standards in the world, speaks volumes about who we are: a field committed to public service, to strengthening communities, to education.

The museum field's dedication to the highest professional and ethical standards is certainly one important reason that museums remain among the most-trusted sources of information for Americans, a status built on faithful compliance with our principles. And with the continued ascendancy of cynicism, about all our national institutions, this is more important than ever.

Accreditation is emblematic of adherence to the field's highest standards, as well as a commitment to excellence in all that a museum does. That's why we at AAM continue to invest in and promote accreditation.

But perhaps the prime example of what dedication to high standards can earn is in Detroit, where the renowned Detroit Institute of Arts (DIA) has had to combat a determination by the leadership of that bankrupt city to sell off its singular, world-class collection to help balance the city's books. Throughout an extended siege on the integrity of the collection, DIA director Graham Beal and his courageous staff have never once yielded to the proclaimed notion that the priceless



collection is a fungible asset. This devotion to museum standards is part of the museum's DNA. When the museum was struggling financially a few years ago, Director Beal said pointedly, "The museum is there to protect the collection; the collection is not there to save the museum." And it was that embrace of high ethics and standards that helped the DIA win a millage vote in 2012, whereby the people of the tri-county area voted to tax themselves to directly support the museum.

Undoubtedly, such a principled approach to doing business was essential to what appears, at press time, to be the long-sought solution to this debacle. Generous support from a visionary group of foundations, a wise investment by the state of Michigan and the DIA's commitment to raise \$100 million over the next 20 years to bolster the city's pension funds seems to be the salvation for the museum's one-of-a-kind collection. The DIA is poised to continue to serve the city and its citizens, and help revive its economy. One need only look to the DIA to know why standards are critical to the future of our field, and what the term "standard bearer" truly means. «

Orlh. Bell





AYE FOR THE AGENDA

I enjoyed reading the "Point/ Counterpoint" article on strategic planning in the January/ February issue of Museum magazine. Both authors shared valuable insights into the question of strategic planning.

As a museum director

who has gone through the accreditation cycle twice, and has been involved in strategic planning not only in the museum field but in the role of board member and chair of other nonprofits, I agree with Carl Nold that the old paradigm of strategic planning is no longer serving the needs of museums. A shift towards a strategic agenda is critical for success in the new environment we operate in.

Thanks for bringing this topic forward. I hope the accreditation process can begin to reflect this new shift in the near future.

> ROGER LIDMAN PUEBLO GRANDE MUSEUM PHOENIX_AZ

Want to share your



ONE



Hatching of a Micronesian Kingfisher on January 1 at the Smithsonian Conservation Biology Institute. This new addition brings the total population of Micronesian Kingfishers to 129 birds. They are extinct in the wild.

71,000,000



Total attendance for museums in Europe, compared to 58 million for theme parks.

Creative Commons photo by James Cridland 2012 Museums and Attractions and Attendance report http://www.aecom.com/deployedfiles/Internet/ Capabilities/Economics/_documents/2012%20 Theme%20Index%20Combined_1-1_online.pdf









97Percentage of arts organizations that have a social media presence on Facebook, Twitter, YouTube, Flickr or other

Pew Internet and American Life Project (January 2013) http://www.pewinternet. org/~/media/Files/ Reports/2013/PIP_ ArtsandTechnology_PDF.

platform.



1,000

Number of museums that China plans to establish in the next 10 years.

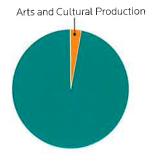
2012 Museums and Attractions and Attendance report http://www.aecom.com/deployedfiles/Internet/Capabilities/Economics/_documents/2012%20Theme%20Index%20Combined_1-1_online.pdf

3.2

Percentage of the nation's entire economy (a \$504 billion industry) represented by the arts and cultural production.

U.S. Bureau of Economic Analysis

http://arts.gov/news/2013/us-bureau-economic-analysis-andnational-endowment-arts-release-preliminary-report-impact

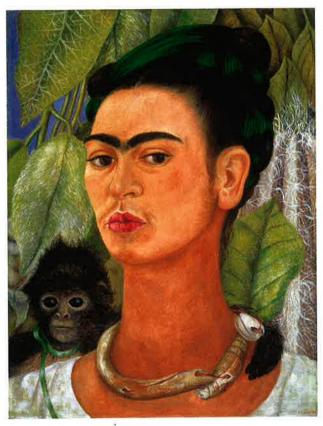




Jordan Schnitzer Museum of Art
University of Oregon, Eugene | Since she first
emerged on the New York City art scene in the mid1990s, Kara Walker has distinguished herself as one of
today's most successful and controversial artists. Time
magazine named her one of the "100 Most Influential
People in the World, Artists and Entertainers" in 2007.
Walker is known for her black paper silhouettes that
transform a dainty Victorian medium into violent
scenes from the antebellum South. These elegant,
darkly humorous images open up discussions about
racial issues and stereotypes that have persisted
over 150 years since the Emancipation Proclamation.
"Emancipating the Past: Kara Walker's Tales of Slavery

and Power" displays a range of Walker's projects, uniting her early and more recent works, which include sculptures and videos. A highlight is her critically acclaimed large-scale print portfolio *Harper's Pictorial History of the Civil War (Annotated)*, in which Walker combined her trademark silhouettes with original illustrations from Harper's 1866 text about the Civil War. To May 2016. Additional venues: Boise Art Museum, ID; Tufts University Art Gallery at the Aidekman Arts Center, Medford, MA; David C. Driskell Center, University of Maryland, College Park; Springfield Art Museum, MO; University of Wyoming Art Museum, Laramie.





Denver Art Museum

Frida Kahlo, Andy Warhol and Jackson Pollock are among the household names deemed "Modern Masters: 20th-Century Icons from the Albright-Knox Art Gallery." This exhibition unites nearly 50 iconic artworks—from post-Impressionist works by Henri de Toulouse-Lautrec to Pollock's drip paintings—by more than 40 of art's most influential figures since the late 19th century. It also traces themes that developed throughout this stretch, such as process-oriented art and an emphasis on subjects from everyday life. To Sept. 20, 2015. Additional venues: Albright-Knox Art Gallery, Buffalo, NY; San Diego Museum of Art; Crystal Bridges Museum of American Art, Bentonville, AR; Milwaukee Art Museum.

American Museum of Natural History

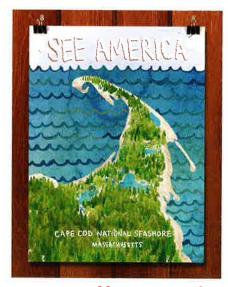
New York Though an overwhelmingly negative term, "poison" is in fact often used for good. "The Power of Poison" explores how this contradictory nature influences literature and myth, the medical field and the natural world. Instances of poison in fairytales and legends are dissected to reveal the kernels of truth in these fantastic stories. The exhibition also travels into a Colombian forest, where toxic species rely on poison to survive, and examines how scientists have utilized poison to protect, repair and heal human cells. To Aug. 10, 2014.





MIT Museum

Cambridge, MA Kinetic artists emphasize a sense of movement in their works. "5000 Moving Parts" showcases pieces by four such artists: Arthur Ganson, Anne Lilly, Rafael Lozano-Hemmer and John Douglas Powers. Each of their large-scale designs provides viewers a rich sensory experience. Ganson's sculptures, for example, utilize gears and pulleys—elements originally intended to speed up production but that Ganson uses in elaborate, often playful interactive constructions. Rafael Lozano-Hemmer's piece *Please Empty Your Pockets* encourages visitors to do just that, placing items on a conveyor belt to be scanned and displayed as part of the work. To Nov. 30, 2014.







Franklin D. Roosevelt Presidential Library and Museum

Hyde Park, NY As part of the New Deal, Franklin D. Roosevelt employed artists to create posters showcasing some of the country's most beautiful natural elements. The project was called "See America"—a name shared by the crowdsourced art campaign launching this year, more than 75 years after the original. Spurred by the Creative Action Network, the new version, "See America...Then and Now," has again asked artists and designers from all 50 states to make works highlighting national parks and other quintessential American sites. To June 30, 2014. Additional exhibitions are in the works across the country.



Pulitzer Foundation for the Arts

St. Louis | Spanning the last 50 years, "Art of Its Own Making" looks at how viewers and environmental factors can affect and alter artworks over time. Pieces by a dozen artists—including Nam June Paik, Agnes Denes and Hans Haacke-explore how their sculptures, installations, films, performances and sound works have evolved thanks to outside elements. Haacke's sculptures examine biological cycles, for example, while Len Lye's Wind Wands, installed on a rooftop bamboo court, responds to the movement of the natural flow of air. To Aug. 23, 2014.



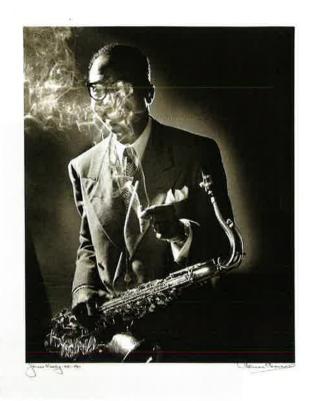
Toledo Museum of Art

Extending from the grounds of the Musée du Louvre to the Place de la Concorde, the Tuileries Garden is a beloved gathering place and artistic center in the heart of Paris. Created at the behest of Queen Catherine de Medici in 1564, the garden began as an outdoor museum exclusively for French royalty and evolved into one of Europe's first public gardens. The 63-acre park has since served as both an inspiration and a home for great pieces of art. More than 100 of these works are featured in "The Art of the Louvre's Tuileries Garden," including sculptures once on view in the garden—by sculptors including François-Joseph Bosio, Antoine Coysevox and Aristide Maillol—and paintings, drawings and photographs that depict its beauty and history. The space's influence on French and American Impressionists, such as Claude Monet, Camille Pissarro and Childe Hassam, and on photographers including Henri Cartier-Bresson and André Kertész is also examined. The exhibition debuted at the High Museum of Art in Atlanta, which transformed its own piazza into a landscaped park inspired by the Tuileries Garden in honor of the show. To Sept. 21, 2014. Additional venue: Portland Art Museum.

» DÉBUTS

Kennedy Museum of Art

Athens, Ohio Billie Holiday, Miles Davis, Sarah Vaughan and Chet Baker are among the jazz icons who have been captured by Herman Leonard's lens, Several of the award-winning photographer's gelatin silver prints are on view in "Improvisations: Jazz Photographs by Herman Leonard." Leonard (1923–2010) graduated from Ohio University, the only school in its day to offer a fine arts degree in photography, While recording images of the New York and Paris jazz scenes between the 1940s and 1960s, Leonard developed close friendships with many of the figures he photographed. To May 4.



Shelburne Museum

Shelburne, VT Steel spikes transmute into soft, flowing flowers in the hands of John Bisbee. The Maine sculptor's recent work is on view in "John Bisbee: New Blooms." For these floral-inspired sculptures, Bisbee bent and welded together nails to form organic shapes that belie their medium. These include the work Hearsay, a monumental, cone-shaped flower in which the nails create a brocade-like effect. Each of the gallery's walls is hung with one of Bisbee's monumental works, such as Pelt, in which some 5,000 spikes resemble the texture of an animal's coat. To May 26.

Richard Meier Model Museum

Jersey City, NJ Celebrating the work of an internationally renowned architect, the museum opened to the public on January 12. Meier counts the Getty Center in Los Angeles, the High Museum in Atlanta and the Barcelona Museum of Art among his many projects; he is also the youngest solo winner of the Pritzker Prize for Architecture. The museum, a 15,000-square-foot space, hosts Meier's extensive archives, including some 400 models, 200 drawings and 50 sculptures. In addition, the building features a rotating exhibition gallery and a research library for architects, stocked with more than 1,000 books from Meier's personal collection.





Center for Architecture

New York Protecting structures against the potential destruction of earthquakes has led to sophisticated and specific developments in architecture and design. "Considering the Quake: Seismic Design on the Edge" examines the technology put to use in buildings sited on fault lines throughout the world, from the Taipei Performing Arts Center in Taiwan to the Contemporary Jewish Museum in San Francisco. Architectural and structural models are juxtaposed with videos of seismic testing and a shake table, used to determine a structure's ability to withstand quake-like tremors. To May 26, 2014.

Cleveland Museum of Art

The museum kicked off 2014 by completing its eight-year expansion and renovation—a \$350 million project. The museum's west wing, the final piece of the transformation, opened to the public in January. Within these spacious new galleries are nearly 500 statues, sculptures and other works from China, India and Southeast Asia, such as a 9th-century brass statue of Buddha and a 16th-century calligraphy scroll spanning more than 11 feet. As part of its renovation, the museum also added a glass-enclosed atrium connecting its old and new buildings, as well as new galleries dedicated to Egyptian, Greek, Roman and African art.





Center for Italian Modern Art

New York Italy is widely known for its fashion and food, but perhaps less so for its present-day art scene. Dedicated to promoting appreciation for modern and contemporary Italian art, the center opened on February 22. Each year, the SoHo location will host an installation of works rarely seen outside of Italy, complemented by an educational series of programs and events. Its inaugural exhibition, on view through June 2014, focuses on Fortunato Depero (1892–1960), with more than 50 of the Futurist artist and designer's paintings, sculpture, tapestries, collages, drawings and magazine covers.

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Go Deep

Intense heat, bone-crushing pressure and toxic chemicals—welcome, and step right in. The Aquarium of the Pacific's new special exhibit, "Wonders of the Deep," introduces visitors to the mysterious environment of the very deep ocean: hydrothermal vents (so you thought that all life requires photosynthesis?), bioluminescent creatures such as the blandly named "flashlight fish" (no batteries needed) and a life-size model of a "whale fall"—the descent to the ocean floor of a dead whale and the resultant, years-long dining for an army of deep-sea scavengers. With its interactive displays and distinctive sound, lighting and wall projections, "Wonders of the Deep" received an international GOOD DESIGNTM Award for the work of its exhibit designers, Bowman Global Change in collaboration with Ed Hackley Design. Don't miss the Jelly Touch Lab. Deeply satisfying.

Corporate Largesse

Corporations the world over collect art, a well-known fact, More surprising is the breadth of that collecting activity: massive and global. A new book published by the Wapping Arts Trust in the U.K. attempts to catalogue that activity, and the handsome, fully illustrated re-

sult is fascinating. Why do corporations bother? To improve the corporate image and brand, the work environment for staff, and community relations, the authors tell us. Trying to make money on art is way down the list. Borusan Holding, an "industrial conglomerate" in Istanbul, collects international contemporary art and opens its headquarters to the public on weekends. Art, its CEO explains, "is a global language that builds bridges between people." Illustrated examples run from Attijariwafa Bank Foundation in Morocco to World Bank Group in the U.S. A Celebration of Corporate Art Programmes Worldwide by Peter Harris and Shirley Reiff Howarth, 296 pp., 320 color illustrations, hardcover, \$120 USD. Copies available at www.art--John Strand worldeurope.org.

Monumental Man

George Clooney as an art conservationist? Matt Damon as a museum director? Has Hollywood run out of apocalyptic zombies? No, it's the feature film Monuments Men (released In February), written by and starring Clooney and based on true events: the Monuments, Fine Arts, and Archives program of the U.S. Army, sent to Nazi-occupied Europe in 1943 to rescue masterpieces of art and architecture from looting and destruction. Clooney plays George Leslie Stout, Harvard-trained conservationist and later director of the Isabella Stewart Gardner Museum, Damon plays James Rorimer, later director of the Metropolitan Museum of Art. Cate Blanchett plays Rose Valland, French art historian and member of the Résistance. Surprising but encouraging that the Hollywood studio system would immortalize museum professionals, but these men and women did succeed in the first official effort of an army to protect cultural artifacts during wartime—and oversee their restitution after the war. Heroic, even by Hollywood's standard.



How can we protect our multimedia museum's intellectual property?

BY EDWARD E. WEIMAN AND JOSHUA M. KEESAN

What intellectual property issues arise when museums shift from being static archives to producers and distributors of curated, multimedia experiences?

The legal issues can run the gamut from copyright and trademark infringement to rights of privacy, defamation and misappropriation of likeness—an infringement on the ownership that each individual holds in the commercial use of his or her likeness. Take, for example, a children's museum with interactive exhibits where visitors can make their own claymation movies, create personalized self-portraits after digitizing their own images or add written comments below existing works on display. Each of these interactions gives rise to the creation of works covered by copyright, which embraces "original works of authorship fixed in any tangible medium of expression." In

this example, such works would include motion pictures, audiovisual works, sculpture, pictorial art and literary works, the ownership of which, at the very least, would need to be sorted out as part of any effort to display these works to other visilors.

When a museum partners with outsiders on an interactive work, who owns the resulting creative assets?

The answer is largely a creature of copyright and contract law. The basic principle is that the original copyright holder owns all rights of display, reproduction, distribution, etc. That raises the question as to who the rights-holder is, however, particularly when art projects are crowd-sourced. Consider a popular video for the song "Hibi no Neiro" by the band Sour that was comprised almost entirely of a mosaic of videos submitted by fans. It garnered over 4 million

hits on YouTube, and is precisely the type of collaborative work that should involve agreements with all the contributors, addressing rights of ownership in their contributions, including the right to use their likenesses in the video. In the absence of such an agreement, which often includes a license and/or a release in favor of the artist, any one of these contributors might claim co-authorship of the work, and thus co-ownership of the copyright in the work. In preparing such an agreement for a crowd-sourced or interactive work (as in the previous example of the children's museum), it is important to include both a grant of rights and a release of any claims against the artist in the event of a later dispute.

What are proprietary assets?

In the intellectual property context, this refers to copyrights, trademarks and patents, although the focus is typically on copyrightable material such as static works of art, audiovisual material, music and the like.

When art, technology and entertainment intersect in the context of interactive multimedia works, how do museums protect and manage proprietary assets and distribute content?

By aggressively managing the museum's rights in the works that it displays or otherwise uses for commercial (i.e., marketing) purposes. Television and movie studios have rights and clearances departments that are charged with ensuring that they have the rights to every aspect of their creative output, and museums should be every bit as thorough. This approach requires only that museum personnel understand the possible channels in which the museum's works might





be distributed now and in the future, including via the Google Art Project and/ or other online displays or museum walkthroughs. Museum counsel should ensure that every acquisition covers every possible contingency in terms of the work's source and the prospective channels of distribution, such as traditional brick-and-mortar exhibits, online exhibits created by the museum or other outlets like (again) Google Art and Google Books.

When is a digital reproduction considered a new work?

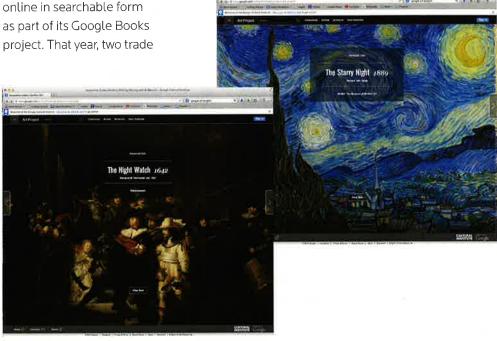
The continuing efforts of museums to provide online digital reproductions of the works in their collections could raise intellectual property concerns if such museums do not have all of the necessary rights or

permissions to do so. The involvement of a third party such as Google in that process raises interesting questions as to whether an image fully recreated as a high-resolution digital reproduction becomes a new work. In 2005, Google began scanning millions of books and putting the texts online in searchable form as part of its Google Books

groups representing authors and publishers sued Google for copyright infringement. In October 2012, after seven years of litigation, the Association of American Publishers announced a settlement with Google. The other trade group, the Authors Guild, did not settle its class action case against Google.

In 2013, a New York federal court concluded that Google's digitization project could not give rise to any liability for copyright infringement, based on Google's successful assertion of the so-called "fair use" defense, under

which a defendant escapes copyright liability under certain circumstances. Key to this determination was the court's conclusion that Google's digitization of the books was highly "transformative." In other words, the court concluded that by digitizing the text of the books, Google had transformed the texts by incorporating them into a massive online database that can serve as a vital resource for readers, scholars and researchers around the world. The court held that, because of the project, "[w]ords in books are being used in a way they have not been used before."



>> INFORMATION Please

This determination is critical to the "fair use" defense, since a copy will generally not be deemed to be infringing if it "adds something new" to the original work, "with a further purpose or different character, altering the first with new expression, meaning or message."

This important decision echoed a related proceeding in which the Authors Guild sued an umbrella organization of university libraries known as the HathiTrust that entered into agreements with Google as part of its "Mass Digitization Project."

Through this project, the HathiTrust entered into agreements allowing Google to scan and digitize works in the universities' libraries. After the Guild sued, the court similarly held that copying a work for purposes of search constitutes fair use under the Copyright Act because, among other things, it is again a "transformative" use, which bars a claim for infringement. As museums work to make more and more of their collections and holdings available to users via museum websites,

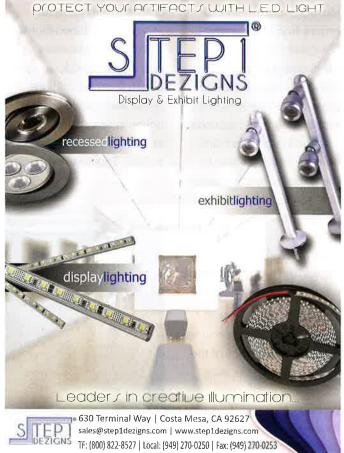
this pair of cases provides museums more leeway and reduces the threat of intellectual property conflicts arising from such activities.

When is a museum not a museum?

As with the question as to whether a fully recreated original work can be its own original, a recent case raised questions about the definition of a museum. In a curious development in the life of the novel *To Kill a Mockingbird*, the author, Harper Lee, recently sued the so-called Monroe

County Heritage Museum located in her hometown. Lee sued under a variety of trademark law theories. alleging that the museum was trading on the fame of the novel under the guise of a "historical" institution (Lee claims that she owns the rights in the marks "TO KILL A MOCKINGBIRD" and "HARPER LEE"). According to the complaint, the museum is operating on the site of the courthouse that supposedly served as the setting for scenes in the novel and the movie. Lee claims that the museum







is nothing more than an elaborate gift shop selling everything from fleece vests, wine bags and key chains to seat cushions, car decals and "beverage huggers" emblazoned with the TO KILL A MOCKINGBIRD trademark.

Interestingly, Lee suggests that a museum's mission can be judged by the extent to which it merchandises art and culture, as opposed to preserving and curating it. Specifically, she alleges that the museum claims "its mission is 'historical'...but ...its primary

mission is to trade upon the fictional story, settings and characters that Harper Lee created in To Kill a Mockingbird...." Put differently, the central premise of the complaint appears to be that you can only call yourself a museum so long as you have the proper rights in the works you display.

In response, in November 2013 the museum filed an as-vet undecided motion to dismiss Lee's complaint, asserting that any use of Lee's trademarks was protected by the First Amendment and the "fair

use" doctrine. Although these defenses are not explained in the motion, the museum apparently intends to defend itself by defining its mission as historic preservation and stewardship, rather than the mere commercialization of Lee's trademarks. The outcome of the case may well provide some insight into whether that distinction holds any meaning. While most museums need not be concerned with claims about their legitimacy, they might need to consider an issue raised in the context of a work exploited in the gift shop (in

posters, catalogues, etc.) that is not currently on display, to the extent that this issue is not covered in the rights agreement for the work. «

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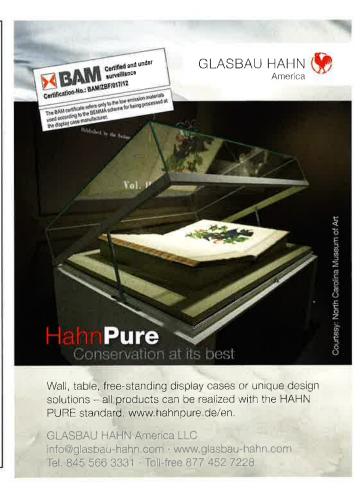
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Less Is More

Free admission can grow—and reprioritize—the museum.

BY MAXWELL ANDERSON

useums across the United States have historically sought to care for cultural heritage, offer the public a path to understanding and appreciating the objects in our care, and provide a platform for creativity. Yet when a few dozen artifacts from King Tut's tomb swept across North America some 35 years ago, the founding intentions of our nation's museums began to seem quaint. We became increasingly focused on earned revenue—to the point of privileging its potential over a traditional focus on research and education. As a result, the programmatic and physical priorities of museums began to shift. We gave particular weight to ticketed special exhibitions, and began to plan physical expansions tied to earned revenue: spectacular atria for events, larger special exhibition galleries, expanded stores, and enhanced food and beverage spaces.

For a handful of major art museums, this business model has been financially successful. In New York City, for

instance, the Metropolitan Museum of Art, the Museum of Modern Art and the Solomon R. Guggenheim Museum are all admissions-rich art museums. They all boast permanent collections outstanding both in reputation and in their utility to barter for access to major loans and exhibitions, and they all have a large, sustainable budget supported by a sizeable endowment or recurring annual support. In addition, all three enjoy ready access to a massive, culturally motivated and affluent international tourist audience—about 11 million such visitors to the small, easily navigated island of Manhattan each year. Similarly, the Los Angeles County Museum of Art is the flagship institution in a sprawling metropolitan area with 6 million international visitors in 2013, and the Fine Arts Museums of San Francisco might be included as well, with some 4 million international visitors to its home city in 2012. The indispensable trait of freespending tourists for admissions-focused art museums is

that they are international. Regional or national tourists may elect to pass over big-ticket attractions if they can return at a later date. International visitors, by contrast, often make the choice to spend on experiences because they know they cannot easily return in the future.

Hundreds of other American art museums, however, are not as fortunate as these few institutions, and fall to the back of the line in terms of ticket revenue as a percentage of earned income. Some cannot rely on a substantial international tourist base. Chicago, for example, only had 1.37 million international tourists to entice into art museums out of the city's total of 46.37 million tourists in 2013; Boston welcomed a mere 1.3 million international visitors in 2011. Others—even some major museums in New York, Los Angeles and San Francisco—lack the high-caliber permanent collection and alternative means of financial support of the Met, MoMA and the Guggenheim.

The boards and directors of art museums around the nation nevertheless look to these few outliers as the gold standard rather than as exceptions to the rule. This impulse has led many art museums down an unsustainable path with a resulting negative, long-term impact on the missions and outcomes. The results may play out for years, as blockbuster shows and ambitious expansions are devised for potential visitors who are increasingly discriminating given the endless distractions available on screens and at generously marketed "family-friendly" destinations coveted by kids and parents alike.

Without millions of well-heeled international tourists, it is unreasonable to count on net return from \$20-\$45 ticket prices. Without an unparalleled collection, it is unlikely to guarantee access to the most compelling loans without paying excessive fees that aren't likely to be recouped at the box office. And without a huge endowment or a cash-attracting brand that withstands any vicissitudes in compelling programming, it is dangerous to bet on major exhibitions that may underperform admissions forecasts.

Many museums develop or host large exhibitions bearing major costs. And some of these projects provide a cash

return on investment. But most don't do much more than break even, if thorough accounting considers marketing, inkind staff support and front-of-house expenses. And in the run-up-to-sweep-up periods bracketing such adventures, the museum's core mission often languishes or is put to the side, representing a hidden but potentially significant cost.

The Dallas Museum of Art's move to free general admission in 2013 can be explained very simply: the DMA values the participation of the public more than we value the modest return (2.7 percent of our 2012 operating revenues) realized from paid general admission. We invest in major, ticketed special exhibitions, like the rest of our peer institutions, and we occasionally meet rosy forecasts. But not always.

Most art museums are different from other cultural destinations because we don't rely as much on admissions to pay the bills. Zoos and science museums—along with theaters, concert halls and opera houses—may realize 40–60 percent or more of their income from gate or seat sales. For some art museums, by contrast, general admission might account for up to 10 percent of income, but the average is closer to 4–5 percent. Our model is typically much like that of a public library: we receive substantial philanthropic support from generous individuals, government agencies, foundations and corporations, and we serve the public by seeking an educational outcome rather than a commercial one.

As the quest for resources has become more competitive, the trend for art museums to emulate commercial attractions has rarely proved its value. In many cases, it has resulted in higher ticket prices that drive away families, larger buildings that are increasingly expensive to operate and art exhibitions intended to yield admissions income rather than enhanced understanding of the lessons of art.

At the DMA, we had three goals when going free a year ago: 1) to invite everyone to have an unforgettable experience, 2) to offer exhibitions and programs that serve our public and build our reputation as an innovative, ground-breaking educational institution, and 3) to do so while living within our means. Current and new donors have helped cover the DMA's expenses to make it possible to accomplish

these objectives. The most recent evidence: a \$9 million gift announced in November 2013, of which \$4 million is operating support to compensate for any foregone admissions income over the next few years.

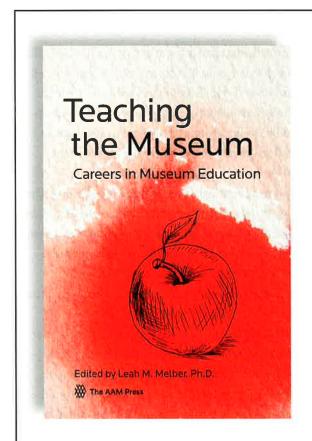
Today we seek increased elective spending rather than required spending at the museum. The DMA still charges for unique experiences such as major exhibitions and programs because we need help to pay for their one-time costs. And we will still charge for those supporting goods and services that bear fixed costs, such as underground parking.

In exchange for going free, we have asked the public to show up. Often. And in so doing, anyone can join the DMA Friends program for free. Conventional museum memberships costing under \$100 end up netting very little because of staffing overhead, events, mailings, and the opportunity cost of giving away free tickets and parking.

Our free membership program allows visitors, at no charge, to earn points, which may in turn be redeemed for the benefits entry-level members expect: parking, exhibition tickets, discounts in the store and café. And experiences that Our goal is to make a case for the DMA as an educational and community resource—and to resist the temptation to act like a ticketed attraction.

they don't necessarily expect: tours of storerooms, private film screenings—and even, as on November 1, 2013, an overnight stay for adults at the museum.

By the end of January 2014, the first anniversary of the free membership program DMA Friends, we had enrolled some 50,000 individuals. Ninety-five percent of these new members had no previous known affiliation with the museum. An average of 868 new members continue to join every week.





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Meanwhile those members who have elected to stay as donors, now known as DMA Partners (at a level starting at \$100), have stepped up their contributions, and we have exceeded our forecast in earned revenue from this constituency, which hovers around 17,000 households. As a result, we have a new business model that offsets losses in earned income with gains in contributed income.

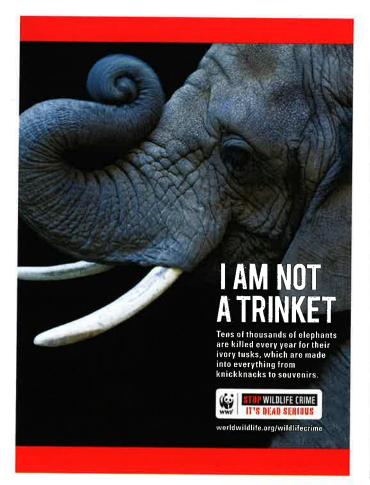
With over 67,000 combined Friends and Partners, we are on track to continue to grow not only in the number of members but in our relevance to the residents of our region. Through this opt-in program, we are learning where people live, how they use the museum and many other facets of what was formerly an anonymous crowd of visitors. We utilize the newly acquired data to analyze how people experience the DMA, and share these results, plus demographic information, with our donors and funders.

Our goal is to make a case for the DMA as an educational and community resource—and to resist the temptation to act like a ticketed attraction. Some institutions have made programmatic decisions indexed so heavily to mass appeal that

their scholarly, educational mission is compromised. Instead, by acting like the educational entity our charter established over 110 years ago, we are focused on increasing our relevance and encouraging people to visit and support us.

Coming to work is much more fun when we know that our bid for relevance is directly linked to an intrinsic professional outcome benefiting a broad and diverse public—and when every staff member, volunteer and trustee is freshly dedicated to that outcome. While we wouldn't prescribe this approach for every other museum, we think it's worth a look, and hope that your institution might be interested in trying out something comparable. \ll

Maxwell L. Anderson is Eugene McDermott Director, Dallas Museum of Art.





Founding Father, Found

Discovering a lost treasure triggers an odyssey for a historic house museum.

BY CAROL S. WARD

"I think I found something."

That statement made me look up from writing e-mails on a hot summer day last July. A hidden treasure lurking in a closet or drawer is enough to quicken the pulse of any museum professional. Don't we love our jobs in part for the opportunity to learn and discover as well as inform and teach? This is especially true at a historic house museum where the direct link to the lives of the people who once inhabited the structure is still present. But finding a 230-year-old letter that might have changed American history was only the beginning.

The Morris-Jumel Mansion is located in the Washington Heights section of New York City. Perched on the second highest spot in Manhattan, the house has truly been a witness to history, being the oldest private residence still standing in the Manhattan city limits. Built in 1765, it first served as the summer country estate of British Colonel Roger Morris and his wealthy American wife, Mary Philipse Morris.

Their land consisted of 130 acres, the majority of what now makes up Upper Manhattan. With the outbreak of the Revolutionary War, the Morrises fled back to England. George Washington made the mansion his headquarters in the fall of 1776, fighting the Battle of Harlem Heights in September of that year. After the war ended, Washington returned to the house in July of 1790 to host a dinner party for his cabinet,



with the likes of Adams, Jefferson and Hamilton in attendance.

Perhaps it was fate that the "I-foundsomething" moment happened on the 223rd anniversary of Washington's dinner party. It is rumored that the house is haunted, so maybe the founding fathers shuffled the papers that day. Our archival intern, Emilie Gruchow, had





approached me in May with a project to organize, catalogue and eventually digitize our "flat files," the area in the archives that was uncharted territory. No one had looked at items there since the 1970s, and we knew there were documents that would help us better tell the Morris-Jumel story. But I was not prepared to walk up to the archives and stand in front of what looked like an authentic 230-year-old document.

Emilie had uncovered a folder labeled "18th-century doctor's bills," and in it, the draft of a letter written in 1775

entitled "The Twelve United Colonies, by their Delegates in Congress, to the Inhabitants of Great Britain." Although a final version of the document was known, there was no existing draft of this letter. More important, no one had been able to ascertain who had written the appeal, since the final version was published only in newspapers. The intention was for the manuscript to be printed and disseminated in Britain in the hopes of gaining popular support, thus pressuring the king and his ministry to redress Colonial grievances.

When the final version was published in Philadelphia in the summer of 1775. James Madison, greatly impressed by the letter's "true eloquence," sought to find the author, but to no avail. Emilie and I both realized that if this document was the elusive draft, we were looking at something that was of great importance not only to the mansion, but to the country.

What to do next? I'm a firm believer in letting a staff person run with her discovery. Emilie reached out to former classmate Michael Hattem, a teaching

>> Inside VIEW =

Below: Etching of the September 16, 1776, Battle of Harlem Heights, Bottom: Eliza Jumel's bedchamber in the historic Morris-Jumel Mansion,



fellow at Yale University and an expert on the Continental Congress, who confirmed that the document was authentic. Hattem is also an expert on Robert R. Livingston. Handwriting analyses established that Livingston was the elusive author.

A 230-year-old mystery was solved.
Emilie and Michael concluded that
Livingston was appointed by the
Continental Congress to compose
this 11th-hour petition directly to the
British people. Since the manuscript's
changes and additions are intact, the
Colonists' state of mind at the brink of



the Revolutionary War is revealed. The address was part of a last attempt at reconciliation, although military conflict had already broken out a few months earlier at Lexington and Concord.

Almost a year after the manuscript was composed, the Continental Congress appointed a committee of five men to draft the Declaration of Independence. Among them was Livingston. The discovery of this document and the verification of its authorship help explain why Livingston was chosen.

While all this scholarly research was going on, I was in my office, deciding what to do next. A museum educator at heart, I realized that a document like this needed to be seen by a larger audience than frequents the mansion. We have approximately 16,000 visitors a year, 7,000 of whom are students. I thought of the importance of this document to students and scholars alike. I was also pragmatic. The mansion is a small, community-based historic house museum, and we are short-staffed and underfunded, like so many out there. My gut told me that we needed to sell the document—not only to allow it to be more widely seen, but also so that we could guarantee the Morris-Jumel Mansion's survival.

Making the call to my board president was one of the hardest things I've done in my career. Luckily, I have a supportive board president who listened and understood that selling was the right course of action. We discussed the next steps, and I recommended going

We needed to sell the document, allowing it to be more widely seen and guaranteeing our survival.

through a public auction rather than a private sale. I wanted the sale to be as transparent as possible, no handshakes behind closed doors. But what if a private person were to purchase the document and lock it away, unseen by the public? When we reached out to various auction houses and dealers. I specifically inquired about their client base. Leigh Keno, whom you might know from the PBS series Antiques Roadshow, was more excited by this find than Emilie, if possible. He not only understood our concerns, but realized that along with the funds we would receive from the auction, this was a chance for Morris-Jumel to become known to a larger audience. Once we selected his firm to represent us, backed by a full board vote, his marketing team went into full swing. Nothing like a story in The New York Times to ring in the New Year.

Museums need to be many things in our changing cultural environment. I would classify the Morris-Jumel Mansion as a historic house, a community arts resource, an educational institution and also a business that needs a solid financial base to survive. I love what I do. I knew I wanted to work in a museum since my junior year of high school. I realized in college

that I wanted to major in art history and museum education to make all the things I love accessible, and hopefully to make people realize that museums are "cool" places. When you visit Morris-Jumel you can see where George Washington slept, and also view contemporary art installations by local Upper Manhattan artists. You can attend a lecture or a ghost hunter sleepover or a tea party or an immersive theater experience. The best moment of my job is when a fourth-grade boy from Washington Heights, who has never been to a museum before, says that this was the coolest trip he's ever been on because he got to touch a 230-year-old cannonball.

None of the things we do would be possible if the museum did not have the funds to operate and maintain the house itself. With the sale of the document on January 26, the Morris-Jumel Mansion tripled its endowment. The winning bid of \$912,500—well beyond our expectations—was from a private collector who has agreed to lend the document for public display. And we are assured of being able to serve our public for generations to come. «

Carol S. Ward is executive director, Morris-Jumel Mansion, New York.

A Boy and His Museum

A story of amazing influence on one young life.

At February's Museums Advocacy Day, AAM introduced two Great American Museum Advocates, selected from numerous stories provided by members. All are moving testaments to the power of museums and the difference they are making for individuals and communities everywhere. The original intent was to select one, but we found the stories of Simone Batiste, 16, from Oakland, California, and Spencer Hahn, 8, of Indianapolis, so compelling that we invited both to join 200-plus museum professionals in Washington who made the case for museums to members of Congress and their staffs.

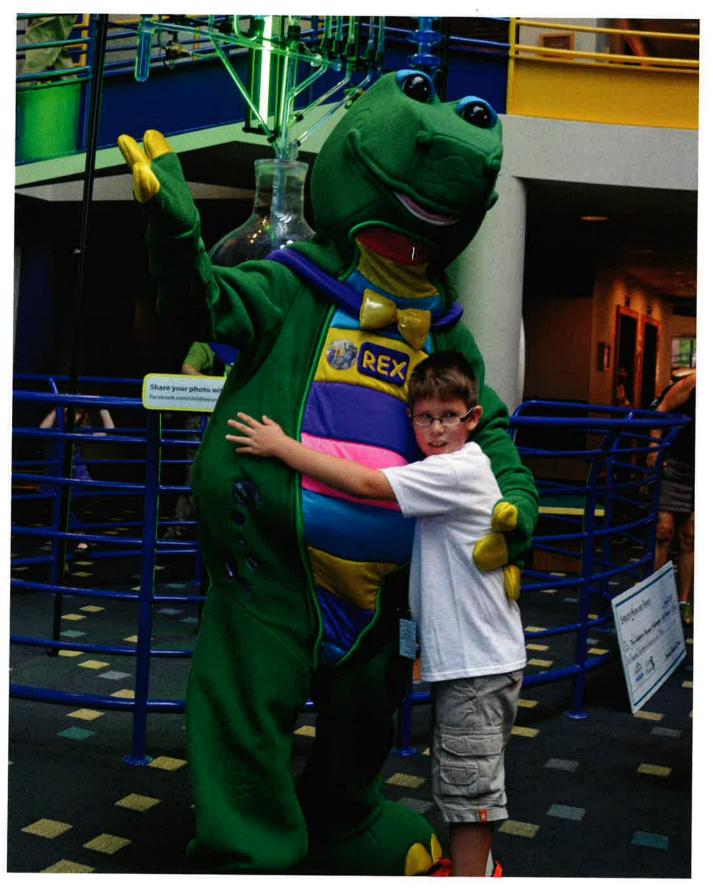
The stories of Simone and Spencer speak volumes about how museums all across the country change lives every day. Simone's tale of how the Chabot Space & Science Center inspired her passion for science will be chronicled in the May/June Museum. More stories will follow in subsequent issues. Following is a glimpse of the relationship that Spencer Hahn and his mother have formed with The Children's Museum of Indianapolis.



he power of museums comes in many forms. For The Children's Museum of Indianapolis (CMI), the best testimonial to its positive impact is embodied in 8-year old Spencer Hahn. Along with his indomitable mother, Erica, the CMI and its dedicated staff are a prime influence in this young boy's life.

Spencer has had more than his share of challenges, beginning even before he was born. He suffered a stroke in-utero, and the consequences were considerable. Luis Escobar, a medical director at Peyton Manning Children's Hospital at St. Vincent, explained to CMI Director of Public and Media Relations Kimberly Harms that the stroke "induced symptoms of cerebral palsy, grand mal seizures and neurobehavioral difficulties felt to be Autism Spectrum Disorder. Children with these diagnoses experience many physical mobility limitations that require significant rehabilitation services, and often need behavioral therapy to address social skills."

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Erica Hahn was told that it was highly unlikely that her son would ever walk or talk.

Determined to seek out and explore every stimulating environment for her child, Erica decided when Spencer was 1 year old to try the CMI. "I had had no affiliation or even familiarity with the museum before that," she says. "But I had always heard great things about the museum. I thought if they help other children grow, perhaps they could do the same for Spencer."

The CMI serves all children, from newborns to aging children who prefer to call themselves adults. For a 1-year-old, the museum's Playscape is a safe place to develop motor skills, learn social skills, and improve agility and balance. Children frequently take their first steps at the Playscape. Incredibly, Spencer was one of them—proving wrong the doctors' prognosis. "I had to hide my tears," Erica recalls, "because I did not want Spencer to think that this great thing he had just done was making me sad. These were happy tears."

Spencer was just getting started. Believing that her son would never speak, Erica had begun learning to sign with Spencer as soon as was feasible. "We had actually developed a way of communicating that was easy and effective. Nothing too complicated, but Spencer was doing well," she said. Then there was another surprise—also at the museum. Spencer had become enamored with the CMI's carousel and its colorful animals. One day, while clinging to his favorite giraffe, Spencer looked at Erica and said simply, "Momma."

"More tears," says Erica. "I believe the museum certainly was the cause of his progress. Nearly all of Spencer's 'firsts' have come at the Children's Museum. There he feels safe, confident and entirely comfortable."

Due to her work schedule, Erica could only take Spencer to the museum on weekends. During the week he would participate in therapies prescribed by his doctors. But the museum staff quickly adopted Spencer as their full-time progeny. "The staff is unbelievable—all of them," she says. "They have come by the house when the weather gets bad, just to check on us. When I have bought tickets to something at the museum, the staff has often brought them by the house and delivered them personally."

Those tickets matter because museum events also play a big part in Spencer's progress. The CMI's Lily Theater is one of its most popular attractions, and Spencer loves the performances and performers. "Like the staff, all the actors at the theater have adopted Spencer as well," his mother says. "He has been permitted to join the actors on stage and be a part of several plays—he knows them all by heart. The actors even asked Spencer to be a part of a production they did at a professional theater across town."

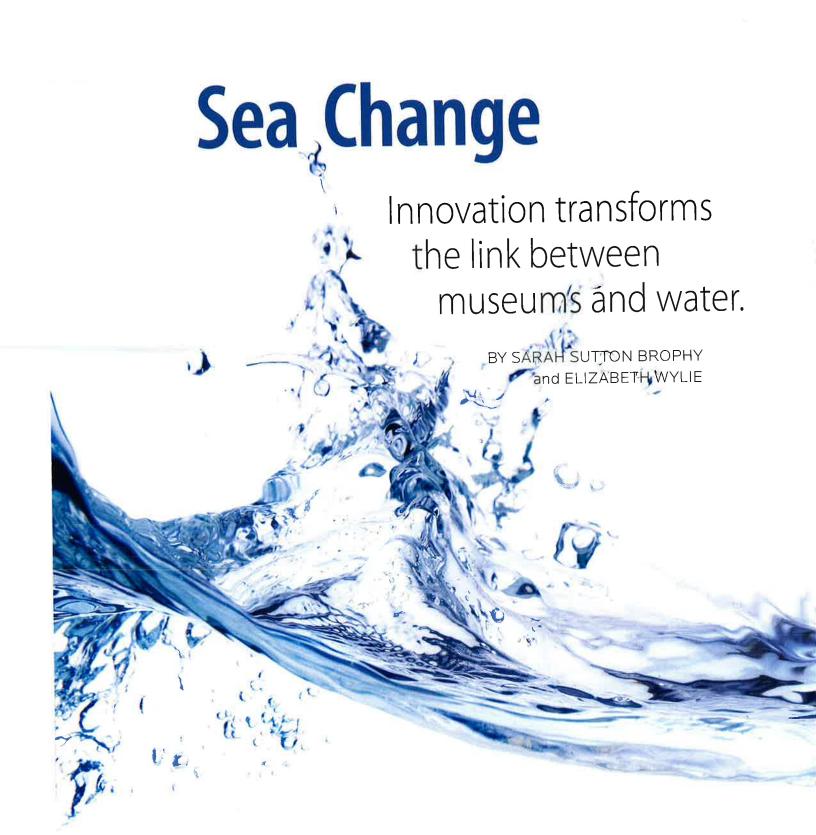
Spencer has also developed a special affinity for the CMI mascot, a big green dinosaur named Rex. "Spencer and Rex have a special bond," Erica says. "Rex doesn't talk, so they high-five one another, and Spencer is always the first to hug Rex. I think that because Rex does not talk, Spencer feels no pressure with Rex, and they can be themselves together. They have a special kind of communication."

"Mom, these are happy tears," he said, "because my museum loves me."

Spencer and Rex are often side by side at the museum's End of Day parade. Designed as a means of clearing the museum at closing time, the parade is a daily event and always celebrated with much fanfare. "The museum staged an enormous, fun celebration when Spencer led the parade for the 100th time," his mother says. "They made a banner with photos of him and Rex, and it was a big occasion." That was Spencer's turn to cry tears of joy. "Mom, these are happy tears," he said, "because my museum loves me."

The feeling is clearly mutual. Spencer has just finished writing a book in which he describes all the activities he loves at the museum, and all the people and things that give him happiness there. (Check the AAM website at aam-us.org in coming weeks for information on how you can get a copy of Spencer's book.)

"It's true," CMI President and CEO Jeffrey H. Patchen told Harms. "Our whole staff loves him. This little boy is an adorable reminder that the things children and families learn in a museum and the people they meet have the power to transform lives. Spencer truly does serve as an inspiration to us. He is a testament to strength, courage and determination, and we are proud to call him our friend." "



"When we try to pick out anything by itself we find it hitched to everything else in the Universe."

–John Muir, "My First Summer in the Sierra," 1911¹

hen naturalist John Muir wrote "My First Summer in the Sierra" many years ago, he described the impact of his experiences in California's Yosemite River Valley and Sierra Mountains. Decades later the "Butterfly Effect"-hypothesizing that the flap of a butterfly's wings in Brazil could set off a tornado in Texas²—became popular, and continues to underlie much current thinking and a slew of books about systems, networks, feedback cycles, tipping points and linkages. The critical message remains the same: everything is connected to everything else.

Humanity's dependency on water exemplifies this relationship.

Water comprises 70 percent of the planet and 70 percent of our bodies. It is something we can't live without. Unfortunately, this connection with water has become troubled. The planet is currently struggling with water overuse, contamination and the climate change effects of drought, floods and other extreme weather events. These water issues connect to energy and what people thought was limitless fossil fuel and unlimited use without consequence. There are serious consequences for water when fracking for natural gas extraction uses 4 to 6 million gallons of water per well and leaves behind assorted chemicals

underground; when oil pipelines leak into our aquifers; and when chemicals for processing coal poison our water supplies—as we saw recently in West Virginia. The ultimate consequence of unfettered fossil fuel use is the blanket that carbon and other greenhouse gases (GHGs) have thrown over the planet. Temperatures are getting hotter and water levels are rising.

In the November/December 2009 issue of *Museum*, we wrote a futuristic take on museums and energy availability 100 years from now. Lately we have been considering this question: What about water and its link with museums?



Our conclusion is that if museums are here forever and the environmental tipping point is now, museums had better be in the business of risk management. What is ahead and how can we plan for the challenges? How do we ensure access to clean water forever?

Museum leaders (trustees, directors and managers) and staff (everyone from curators to educators, to retail and hospitality, and, of course, facility and site managers—well, everyone!) must look ahead, plan for and make changes to mitigate the risks of climate change. Fortunately many are doing just that with creativity, innovation, urgency and confidence that climate awareness is mission fulfillment. Many museum staff have already recognized or dealt with the threat of water scarcity and insecurity (too little, too dirty) and water surges (too much). They have embraced adaptability through science, conservation, and sustainable or restorative design. There are

excellent examples of museums using systems thinking to address water issues while educating their visitors to be water-wise. After all, one person replacing her water-thirsty grass lawn with drought-resistant xeriscaping is just a drop in the bucket. If everyone in Denver did that? That's what we're talking about!

Humans can live one month without food but only one week without water. How long can your collections live without water? Staff at the Denver Zoo and the Denver Botanic Gardens plan not to find out and have taken large and small steps to innovate, conserve and educate. Both institutions are departments of the City of Denver, where water is a big deal. In Colorado 80 percent of the population lives on the Front Range (east of the Rockies), while 80 percent of the water originates from the western slope, largely from rivers and streams fed by snow melt (also in decline—remember that GHG blanket?). Denver Water must move a lot of water to meet the demand of 1.3 million residential customers. Consider this: 50 percent of Denver residential water is used for landscaping, and 90 percent of Denver lawns are non-native species like Kentucky Blue Grass, which has a high water requirement.

That's where the Denver Botanic Gardens come in with a big dose of education and models of good conservation gardening and landscape practices. The garden manages three sites with an annual attendance of 850,000. It is committed to water conservation as a core activity, meeting the ISO-14001 environmental management program's water-efficiency standards. In 2008 the garden overhauled its 1970s irrigation system. The little-seen pipes, pumps and control systems that are part of the real cost of living collections care were updated for efficiency, and site managers continue to measure,

The Denver Botanic Gardens model good conservation gardening and landscape practices through their educational programming (below left) and throughout their grounds (below right and opposite).





monitor and look for more savings.

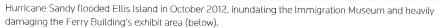
The strong water conservation education program features water-smart garden techniques, and last year led a summit of regional leaders to look ahead at water issues for the year 2030.

Back to John Muir and the interconnectedness of everything....Colorado's water issues are entwined with those of the other western states, complicated by a labyrinth of water rights tangled with climate change issues and burgeoning population growth. On January 17, 2014, California Governor Jerry Brown declared a state of emergency due to an extended drought and called on residents to reduce water use by 20 percent. The following day, Roseville's Utility Exploration Center (UEC) posted this declaration along with conservation tips on their Facebook page and website. The UEC is an environmental learning center and is one of 25 museums that have signed the California Association of

Museums' Green Accord, a non-legally binding, institution-wide commitment to sustainable practice. The center is also supported by a civic agency. much like Denver's zoo and botanic gardens. Increasingly, those who manage our utility infrastructure consider conservation the front line message as they work to balance demand with availability. To shift patterns of behaviors around resource (over)use, they are turning to museums as good and trusted messengers. As you look at your institution's risk management strategies, partner with your local or regional providers to attract incentives and support, and to educate the public. That's using networks and linkages to make a difference.

What happens when there is too much water from sea-level rise (SLR) or storm surges? Plenty! On October 29, 2012, Hurricane Sandy slammed the East Coast hard. One hundred seventeen people were killed; millions were without power for days and, in some areas, weeks. In the storm's wake, many leaders and policy makers began to ask if this was a climate change wake-up call. Words like "resilience" and "adaptation" appeared in rebuilding and policy statements, and restorative design discussions recalled oyster beds and other natural systems that that had been killed, removed or paved over.

In New York Harbor, the Statue of
Liberty National Monument and Ellis
Island received a direct hit, and the
entire national park's infrastructure—
electric, water, sewer, HVAC systems,
phone systems, security systems and
radio equipment—was destroyed. The
statue and pedestal emerged virtually
unscathed, but ancillary buildings
were heavily damaged, and walkways
and docks were lifted and twisted.
Ellis Island flooded, along with its
Immigration Museum's basement. The
museum houses tens of thousands of
archival documents and artifacts that







had been happily climate controlled for 20 years. While the water didn't reach the upper floors and the collections, the lack of power allowed mold to begin growing almost immediately. The National Park Service Emergency Response Team worked nonstop in unpleasant conditions to clean and pack the materials and hand-carry them down three flights of stairs. Six weeks and six trailer loads later, all collections were at an off-site warehouse. The estimate for park damages was \$77 million.

Last year, the museum reopened with systems replaced and elevated above the FEMA floodplain following a commitment by the NPS to "rebuild in smart and sustainable ways." To improve preparations for water risks from climate change, NPS has charged a team of scientists to study 105 coastal parks to calculate SLR and surge risks, and outline place-specific projections for formulating park-specific approaches. The NPS Climate Change Response Program uses data and other tools such

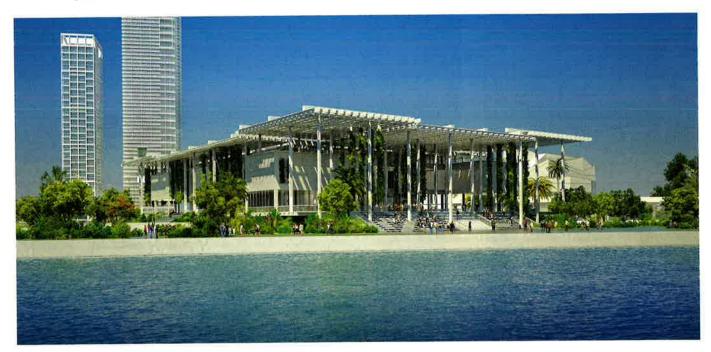
as scenario planning and focuses on four strategies: "1) Using [s]cience to help parks manage climate change; 2) Adapting to an uncertain future; 3) Mitigating or reducing our carbon footprint; and 4) Communicating to the public and our employees about climate change." Science, mitigation, adaptation and education are tools that every museum can use to plan for and address risk on their site and in their communities. Museums are already exceedingly good at that last one—education.

Miami is often cited as the most vulnerable coastal city in the country because of threats of too much water (SLR and surges), and of too little water (salt water infiltration into the aquifer beneath the porous limestone the city is built on threatens the drinking water supply). The city is hemmed in to the west by the largest subtropical wilderness in the country and the largest mangrove ecosystem in the Western Hemisphere, Everglades National Park

(with its history of various assaults and fixes with unintended consequences), and to the east by Biscayne Bay formed by Miami Beach, a thin barrier island. In all, billions of dollars of residential and commercial waterfront development-and the people who use it-are at risk. Miami-Dade County established an Office of Sustainability in 2009 to begin managing climate change issues and coordinate all activities in one unit. The office is collaborating with local museums and libraries on educational exhibits on climate change and sustainability to advance effective communication and turn science into action.

In downtown Miami, on the edge of Biscayne Bay, a new eight-acre museum complex is under development and supported by the county's Building Better Communities General Obligation Bond Program (BBC-GOB). This requires projects to comply with legislation to promote green building and design, and uses LEED Silver minimum requirements to determine

Architects designed the new Pérez Art Museum Miami, located on the edge of Biscayne Bay, to accommodate flood risk,



compliance. The Pérez Art Museum Miami (PAMM) opened in late 2013, while its neighbor, the Patricia and Phillip Frost Museum of Science, is still under construction. The architecture and landscape of both museums have been designed with water in mind. Science and technology education is the primary mission of the Frost. The wildly innovative building design by Grimshaw is entirely conceived as an exhibit of ecological and sustainability principles. It follows the museum's Sustainability Platform, a useful predesign document that outlines the entire project's triple bottom line metric: people, planet, prosperity. Water is a central educational and design concept and plays an important role in the integrated systems that support the 250,000-square-foot complex and the 60,000-gallon aquarium at the building core. Among many strategies, rainwater and grav water are collected and reused, and a constructed wet-land is the museum's front yard,

designed to gather and filter run-off while educating.

Across a common connecting plaza, PAMM's new 200,000-square-foot building (120,000 for interior programs and 80,000 for exterior community space) is adjacent to the water and sits 21 feet above sea level (FEMA projections recommend 14-15 feet) behind a newly reinforced sea wall. The Herzog and DeMeuron design elevates the main building on stilts, with parking beneath to accommodate flood risk. With a LEED Gold target, water-wise strategies are integral to the building design. The landscape for both Frost and Perez was designed by ArquitectonicaGEO with water and resiliency in mind: from plant materials (anything exposed to storm surge is salt-tolerant) and irrigation (100 percent from harvested rainwater and HVAC condensation) to full permeability of all paths, walkways and parking areas. The projects demonstrate one of the most important landscape

design strategies for resilience: always, always, always get the right plants in the right place.

While it is unlikely Miami will restore the natural mangrove shoreline, the museum of the future can participate when there are regional commitments to reversing decades or centuries of development that have adversely affected ecosystems. Sometimes that means removal. rehabilitation and restoration to get the right plants in the right place. The leadership at Blithewold Mansion. Gardens & Arboretum, a historic estate on the shores of Narragansett Bay in Bristol, Rhode Island, understands that its traditional museum role as educator/conservator extends increasingly to waterfront open space and shoreline viability. Through a Comprehensive Master Planning (CMP) process, the museum's team created a waterfront plan that included rehabilitation of the shoreline, which had been over-run by invasive species. The plan calls

Below left: Plans for Miami's Frost Museum of Science include strategies for managing stormwater. Below right: In an effort to eliminate single-use water bottles onsite, the Detroit Zoological Society installed water bottle refilling stations.



ARQUITECTONICA



for replacing the quarter-mile barrier of poison ivy, loosestrife, bittersweet and other invasives with salt-tolerant shoreline plantings, then adding an accessible marsh path. By reconnecting the historic house and its designed landscape with the natural waterfront, the CMP honors historic life ways at the estate, reintroduces high habitat value, improves storm water management, educates visitors in sustainable property management and responsible development in their communities, and supports the regional commitment to shore health. Blithewold Executive Director Karen Binder is in her second go-round on the Town of Bristol's Comprehensive Planning Review Committee. This time, the planning process considered "the whole force and impact of coastal climate change on Bristol Harbor," and is adapting its zoning rules accordingly. Four years earlier, climate change was not part of the committee discussion.

Museums are finding that educating visitors and helping them to understand environmental consequences and make better choices is a win-win.

In 2013 the Detroit Zoological Society (DZS) began a three-year program to educate its guests about the impacts of single-use water bottles and is working to eliminate them onsite. In response, sales for the year dropped by 24 percent from 75,000 to 57,000 bottles, representing about \$11,500 in lost revenue. Though the zoo considers this a cost of doing business, losses are somewhat offset by income from sales of logo-branded reusable bottles, and by avoiding costs associated with the sale of disposal plastic bottles. The DZS Green Team and sustainability staff began by installing water bottle refilling stations in key interior and exterior test sites, and is planning to install more this year. Existing fountains had filling points added; new stations are both drinking fountains and bottle-filling stations. Through point-of-sale education, staff encourage guests to skip bottled-water purchases and use their own refillable bottles or buy the zoo's BPA-free, recyclable, USA-made versions. The staff will continue to tweak the educational and promotional campaign

to accelerate change. The effort has drawn extremely positive responses from the board and community, and nary a grumble among guests.

The Indianapolis Museum of Art (IMA) is the 10th largest museum in the country, with an encyclopedic collection of 54,000 objects representing all periods and material types. They also steward 52 acres of designed landscape and 100 acres of untamed woodlands, wetlands, a lake and meadows adjacent to the White River. A former gravel pit, the 100 Acres site was naturally renewed and opened as an art and nature park in 2010. Following a 2005 expansion, the museum received Energy Star certification and boasts a long and impressive list of sustainable practices across all areas, including water conservation. Indiana has had its fair share of water issues. The summer of 2012 saw the worse drought in 25 years; in 2013 the state was in low drought condition. IMA horticulture staff is fortunate to have historic wells onsite for all irrigation for the designed landscape and they work hard to continue to find water savings in all

Below left: The signature front entrance fountain at the Indianapolis Museum of Art (IMA), whose many sustainable practices include water conservation.
Below right: The LEED-certified Ruth Lilly Visitors Pavilion is located on the IMA's 100 Acres site.





40 / museum MARCH / APRIL 2014

areas. On 100 Acres the new Ruth Lilly Visitors Pavilion by Marlon Blackwell sits lightly within the natural environment. It is elevated just enough to allow floodwaters to pass beneath and is permeable enough for rain to flow through its large, elegant canopy and deck. LEED certified, the building utilizes geothermal for heating and cooling, and water-efficient fixtures draw well water. Creative messaging about sustainability is evident at 100 Acres. where artists and designers demonstrate respect for the environment and can communicate ideas about nature and the urgency of climate change in ways that charts and graphs and data sometimes cannot.

Climate change awareness is moving rapidly, and some leading-edge museums have taken a seat at the head of the table. Phipps Conservatory and Botanical Gardens in Pittsburgh has just taken its Epiphany System live. It's the first permanent installation of its kind—anywhere. Onsite treated sanitary wastewater from Phipps' new Center for Sustainable Landscapes, a LEED Platinum and Zero Net Energy

building, is transformed into pharmaceutical-grade distilled water. The water has any number of uses but is a necessity for supporting some varieties of their orchid collection. Six satellite dishes for the process are replacing the existing, energy-intensive traditional distillation system. Turning wastewater into good water reduces Phipps' use of municipal potable and wastewater resources and infrastructure. How did they figure it out? Director Richard V. Piacentini heard about a system being created for use in developing countries where villages lack fresh water. He invited the designer to collaborate. Now Phipps has a working prototype and the designer has tests demonstrating excellent results. Piacentini not only solved his museum's conundrum, but facilitated a low-energy solution for health and safety for vulnerable populations worldwide. This is how we tackle the future.

Are we in some ways like Samuel Taylor Coleridge's famous Ancient Mariner, who was freed from the burden of the albatross around his neck only after he honored nature? Those museums that embrace environmental sustainability as integral to their mission seem to break free of the albatross—a kind of trope for short-term thinking. Those who are free look ahead into the future, charting a course with innovation and creativity as handmaids to science, mitigation, adaptation and education. More than a drop in the bucket, sustainable museums can make a difference. «

Sarah Sutton Brophy is principal, Sustainable Museums, and Elizabeth Wylie is executive director, The Flannery O'Connor-Andalusia Foundation Inc. They are co-authors of The Green Museum: A Primer on Environmental Practice (Altamira Press 2nd ed., 2013).

ENDNOTES

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- 2 The origins of this description of the concept vary widely but most cite: Lorenz, Edward Norton. Untitled address at the annual meeting of the American Association for the Advancement of Science, December 29, 1979.
- 3 National Park Service, Climate Change Response Strategy, September 2010, http://www.nature.nps.gov/climatechange/docs/NPS_CCRS.pdf (accessed January 28, 2014).

Below left: The IMA's 100 Acres includes a lake, woodlands, wetlands and meadows. Below right: Satellite dishes are part of the Phipps Conservatory and Botanical Gardens' Epiphany System, which transforms wastewater into pharmaceutical-grade distilled water.







BY ELAINE FERRIER

ON ONE FROSTY DAY in December 1929, the frozen shore of Lake Michigan buzzed with life. Thousands turned their collars against icy winter winds, trekking to reach a newly formed peninsula along central Chicago's waterfront. Next door to the Field Museum, a new structure emerged as if from the lake itself: the shell of the John G. Shedd Aquarium.

At that time, the building was vacant save for a freshwater pool

stocked with the types of fish, reptiles and amphibians that could be found in local waters—a consolation for the emptiness of the facility. Before long, the institution was transformed as Shedd's founders set out to bring home the wonders of the sea and create the largest, most advanced aquarium in the world. Railway cars specially fitted with refrigeration coils, steam heaters, compressors and pumps shuttled a million gallons of seawater from Florida to Chicago to fill empty tanks. Exhibits were stocked with marine life, and by



its official opening in May 1930, Shedd was the first inland aquarium with a permanent saltwater collection. The aquarium boasted the world's largest variety of sea life under one roof—a credential it still holds today.

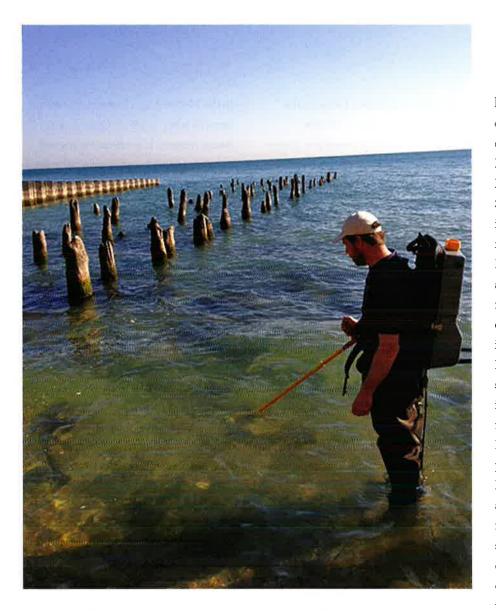
Given the cultural significance and unprecedented scale of those early saltwater exhibits, the aquarium's founders would likely never have predicted the shift that has recently transformed the aquarium. That very first exhibit of freshwater creatures hinted at what has become the aquarium's lasting

legacy for its region: a focus on the Great Lakes. The exotic marine animals one expects to see in a major aquarium remain top draws. But this past summer the aquarium completed a large-scale renovation of the Local Waters gallery with the opening of a revamped and expanded exhibit, "At Home on the Great Lakes." With a hands-on lake sturgeon touch tank, a video booth where visitors can share their connection to the Great Lakes, and a media ticker displaying real-time conservation news, the exhibit's focus is visceral and immersive. It reflects a commitment to engagement that is a cornerstone of Shedd's growing Great Lakes Program. Much of the program's operations might be behind the scenes to the average aquarium visitor, but they are creating powerful ripples throughout the basin.

Thirty-six million people in the United States and Canada depend on the Lakes for drinking water, jobs and recreation. The Lakes are also home to more than 3,500 plant and animal species, many of which are globally rare and unique to those waters, including dozens of threatened or endangered species. These crucial bodies of water are a commonly shared resource that require constant lobbying and advocacy in the face of ever-growing demands. To provide leadership in effective stewardship of the Great Lakes, Shedd has attracted experts in specialties ranging from governmental affairs to aquatic ecology. The aquarium's executives and research team advance partnerships with government agencies, nonprofit organizations and research institutions.

In the Midwest and beyond, Shedd has become a key voice on Great Lakes issues ranging from invasive species to habitat loss to sustainable fisheries. "The Great Lakes are literally steps away from the aquarium, so they've always been of great interest to Shedd," explains Vice president of Great Lakes and Sustainability Michelle Parker. "Our board members have been strong champions of the lakes being a primary focus for Shedd for decades. With their support, Shedd has been able to build the thriving Great Lakes Program to what it is today."

Executive Vice President Roger Germann represents both Shedd and the City of Chicago on the U.S. Environmental Protection Agency's Great Lakes Advisory Board, a group of leaders and officials from Great Lakes communities who foster collaborative action and discuss solutions to complex basin-wide problems. The board recently published an advisory report that contains key recommendations for the development of the Great Lakes Restoration Initiative 2015-2019 Action Plan. Invasive species are identified in the report as top threats, in particular the extremely invasive Asian carp. This fish species has invaded the Illinois River in alarming numbers and is now poised to enter the Great Lakes. Asian carp grow and reproduce extremely fast and are voracious plankton feeders, enabling them to quickly out-compete native fish species and alter vegetation and nutrient regimes. Spread of the invasive zebra mussel throughout the Great Lakes has already reduced plankton populations



Above: Shedd Senior Research Biologist Phil Willink samples for fish in Lake Michigan.

Far right: Shedd staffers move three large Asian carp into the "At Home on the Great Lakes" exhibit,

Far right below: A bowfin in the hands of Postdoctoral Research Associate Solomon David, who studies migratory fishes in the Great Lakes. throughout the Great Lakes, and the introduction of Asian carp has the potential to push the lake ecosystem past an ecological tipping point. On top of these environmental effects, economic losses to commercial Great Lakes fisheries could be enormous. Coordinated leadership from Great Lakes leaders including the advisory board will be essential in determining a response to the threat of Asian carp, including evaluating controversial proposals to separate the Chicago River from the Great Lakes.

Shedd's experts in science and research are also providing key

leadership in addressing Great Lakes conservation issues. Vice President of Environmental Quality Allen LaPointe is a member of Illinois Lieutenant Governor Sheila Simon's Science Advisory Committee, which is currently assessing the performance of the Illinois River Integrated Management Plan and developing an adaptive management process for river projects with the U.S. Army Corps of Engineers. Leading the charge on invasive species research, Shedd Senior Research Biologist Philip Willink is studying the non-native weatherfish in Illinois to understand how this introduced species might affect Great Lakes ecosystems. This project is a partnership with Loyola and Western Illinois Universities and includes diet assessment, reproductive studies and field surveys to determine how far the species has spread. In a project focused on imperiled native Great Lakes species, Willink has also partnered with the Illinois Department of Natural Resources to review and update the state list of endangered and threatened aquatic species. As part of this project, Shedd is producing state-wide distribution maps to identify key habitat gaps and prioritize areas for conservation and management. Postdoctoral Research Associate Solomon David is investigating Lake Michigan's most commercially valuable fish, the lake whitefish, to understand why its natural migratory patterns have re-emerged after a century without migration. This study is in partnership with the University of Wisconsin-Madison and the University of Wisconsin-Green Bay. Much of this research and leadership in Great Lakes governance
takes place out of sight of visitors but
intersects with the aquarium's public
outreach efforts in hands-on programs
for children and teens. School groups
learn about Great Lakes science from
Shedd scientists in onsite Learning
Labs, and high school students get
hands-on training in lake ecology during week-long overnight camping trips
to remote destinations including the
Apostle Islands in Lake Superior.

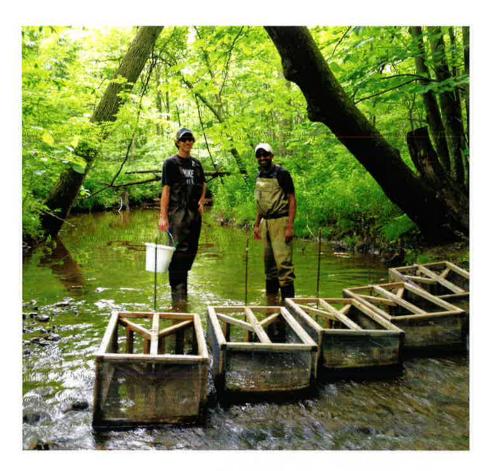
Shedd's educational programs will now reach even further into classrooms with the introduction of the online curriculum, "Asian Carp Exploration." Using Asian carp as a case study, this curriculum fosters critical-thinking skills while teaching students about the connectivity and complexity of local waters. Students are challenged to problem-solve Great Lakes issues and prepare their own Action Plan in video format. At the same time, Shedd released a series of public awareness videos for adults and teens called "High Stakes of the Great Lakes," which highlight ecological issues related to Asian carp. The videos feature interviews with stakeholders from around the basin to give a wide range of perspectives on the risks that Asian carp pose to the Great Lakes. At three minutes each and packed with quick facts and dynamic graphics, the videos are designed to encourage sharing on social media.

The curriculum and video series are the capstone of a recent push from Shedd's Great Lakes Program around Asian carp awareness. Education efforts have reached a wide variety of audiences across multiple platforms, including some unconventional approaches. In July 2012, Shedd partnered with the Illinois Department of Natural Resources and local fishmonger Dirk Fucik to make waves at the Taste of Chicago food festival with an unusual education tactic: free samples. Over two hours, 840 of Fucik's "Asian"

carp slider" mini-burgers were snapped up by festival-goers with very positive reviews. The intent was twofold: to raise awareness about the risks Asian carp pose to the Great Lakes, and to generate a consumer market for the fish in the Midwest. Asian carp is commonly thought to be a bottom feeder with a bad taste, but Fucik says it has a texture and flavor similar to tilapia—it







Above: Conservation Intern Jon Bitner (left) and Postdoctoral Research Associate Solomon David study the effects of dam removal and habitat restoration efforts on migratory northern pike in northern Lake Michigan tributaries.

Far right: A lake sturgeon (above) and a green sunfish (below) are among the Great Lakes fish on display at Shedd.

just needs to be run through a grinder first to remove some pesky bones. He offers free samples of the carp burgers at his store most Saturdays. While most consumers are hesitant to try the fish, they become carp converts after one taste.

Asian carp is one of many choices recommended to consumers in Shedd's Right Bite sustainable seafood guide. The program "is a way for each individual who is a consumer, restaurateur, chef or Shedd visitor to care for the animals they also see as food sources," explains Manager of Great Lakes and Sustainability Aislinn Gauchay. "One of the biggest impacts people can make in the health of any marine or freshwater ecosystems is the choice of what they put on their plate."

This program began when staff were impressed by the Monterey Bay Aquarium's Seafood Watch, but found

that many of the fish recommended as sustainable alternatives weren't available on the Midwest market. To fill this gap, they partnered with the Monterey institution to develop Right Bite, a Midwest-specific, wallet-size consumer guide that facilitates easy decisions on the go. Recommendations are informed by extensive research on the methods and impacts of fisheries around the world. Seafood choices are ranked in order of preference according to the type of gear used, the amount of species accidentally caught as bycatch and trends in population of the species.

Shedd staff are also leaders in the assessment of Great Lakes fisheries and have determined that yellow perch and trap net-caught lake whitefish are best choices for sustainability, while walleye and yellow perch are good secondary alternatives. Right Bite program staff paid visits to several fish farms across the United States to personally evaluate their methods, and feature products from these farms at Shedd events. Winners in the sustainable farmed fish category so far include sustainably farmed paddlefish caviar from Big Fish Farms in Bellevue, Kentucky, and farmed rainbow trout from Rushing Waters Fisheries in Palmyra, Wisconsin. In 2007 Shedd received an award for Public Education. Community Service and Media from the National Oceanic and Atmospheric Administration's Sustainable Fisheries Leadership program, Shedd was recognized for demonstrating leadership in consumer education and for its institution-wide commitment to feed its thousands of exhibited animals with as much sustainable seafood as possible.

The connection between the sustainable harvest of Great Lakes. fisheries and Great Lakes conservation might seem tenuous or even contradictory. Some, particularly on social media, have criticized the aquarium for being an advocate for conservation of aquatic ecosystems while at the same time encouraging the harvest of sustainable fisheries. Gauchay, however, explains that the aquarium hopes that "the program will inspire people to make a difference by connecting animals in our care here to animals in the wild." On a busy day at the "At Home on the Great Lakes" exhibit, the connection between fish harvest and conservation is clear: at one end of the gallery, a father points to a walleye and tells his daughter about a favorite lake to find them: moments later, in front of a tank where a largemouth bass shelters under a rock ledge, a man tells his grandson that knowing this habit is a trick to catching them. "Look for the big rocks," he says. "That's where they hide."

Through these stories of lakes and rivers, the associations that children make with fishing are connections to the sustainable harvest of food. Family traditions of angling and exploring the outdoors have the potential to inspire a new generation. The fish that visitors can see and touch in the Great Lakes exhibit are a tangible connection to lake ecology. These are the creatures that nibble our toes while we are swimming or that we catch for dinner in our favorite lakes and rivers.

As much as these exhibits inspire, they can also warn of what's at stake. A poignant reminder of a threat that's just around the corner is the 2012 addition to the gallery of three adult Asian carp. Representatives from Shedd and the Illinois Department of Natural Resources caught the fish in Humboldt Park, less than three miles from the Chicago River.

When the aquarium first opened for that preview in 1929, visitors were eager to see the exotic creatures from faraway seas that would one day fill the empty halls. But what they saw in Shedd's limestone and marble shell—a freshwater pool stocked with a handful of animals—represented the aquarium's potential to influence and inspire the Great Lakes region. It's a legacy that, 85 years later, is picking up steam. «

Elaine Ferrier is a Shedd Aquarium volunteer and freelance writer with a background in conservation policy for the Government of Ontario. She spent summers on the shores of Lake Huron as a child.





Something OLD, Something NEW

By Stephanie Miller

Green investments pay off for the historic Toledo Museum of Art.

While most new museum projects and additions incorporate energy-efficient strategies as part of the design, it is remarkable for a century-old building to be retrofitted to achieve similar results. So when the Toledo Museum of Art's 102-year-old main building went "off the grid" for the first time last year, it marked a milestone not only in the museum's 20-year sustainability efforts but for historic museum architecture across the country.

Since May 2013, the museum has realized off-the-grid status multiple times, returning energy to the electrical grid and becoming a brief provider of energy in the process. Sound incredible? This is the story of a museum on a mission: to save energy and ultimately to save money, while never losing sight of the visitor experience and the safety of the objects in its care.

THE MUSEUM

The Toledo Museum of Art (TMA), a privately endowed, non-profit institution, is open to the public free of charge six days a week and welcomes 375,000 visitors a year. Its comprehensive holdings include 30,000 works of ancient, medieval, American, European, and modern and contemporary art, as well as prints, drawings, photographs, decorative arts and one of the most important glass collections in the world.

Part of a historic district, TMA's landmark 250,000-square-foot main building consists of 4.5 acres of floor space over two levels and features 45 galleries, 15 classroom studios, the 1,750-seat Peristyle concert hall, a 176-seat lecture hall, centers for families and visual literacy education, a café and a museum store.

The museum's main neoclassical marble building was designed by Edward B. Green and Harry W. Wachter and opened in

Right: Flickering LED chandeller bulbs at the Toledo Museum of Art are energy efficient and offer high-quality lighting.



The TMA's Paul Bernard and Carol Bintz have spearheaded the museum's green Initiatives.



1912, 11 years after the founding of the museum. Since then, four renovations and expansions have added to the museum's footprint. The museum's 36-acre campus includes the world-renowned Glass Pavilion, designed by SANAA, which opened in 2006; the Georgia and David K. Welles Sculpture Garden featuring 25 works of modern and contemporary sculpture; and the Frank Gehry-designed Center for the Visual Arts building, which houses the museum's reference library and the University of Toledo's art department and studios.

Among the museum's current roster of exhibitions is "The Art of the Louvre's Tuileries Garden" (on view through May 11)—a highly anticipated collaboration with the Musée du Louvre, The High Museum of Art, Atlanta, and the Portland Art Museum, Oregon (see page 13). The exhibition presents 100 works of art from the 17th to the 20th centuries related to the garden—many never shown outside of Paris. Recent exhibitions have included "Fresh Impressions: Early Modern Japanese Prints" and "Crossing Cultures: The Owen and Wagner Collection of Contemporary Aboriginal Australian Art from the Hood Museum of Art."

The museum's mission to fully integrate art into daily life is reflected in its range of educational and programmatic offerings to visitors of all ages and its longstanding commitment to art education, most recently teaching visual literacy as a multilayered approach to making sense of our world.

GOING GREEN

It all started back in 1992. Taking the long view, the museum embarked on a plan to reduce energy consumption over time in order to relieve the operating budget pressures typical of a non-profit museum. The museum's green initiatives have been spearheaded from the beginning by Carol Bintz, TMA's chief operating officer, and Paul Bernard, the director of physical plant and capital projects, both of whom have been with the museum for more than 20 years.

The first order of business was to examine all of the building systems to determine what could reasonably be replaced and identify where improvement could be most effectively leveraged. For instance, old motors were replaced with high-efficiency versions, and incandescent lights were replaced with fluorescents. As solar technology progressed, Bernard and Bintz studied whether the museum's geographic location and site lent themselves to solar power; the answer was decidedly yes. Among the sustainable energy practices that the museum concentrated on were solar, energy-efficient lighting, and

microturbines and chillers. Through projects small and large, executed largely by museum staff, TMA invested in a series of energy alternatives while preserving the climate controls required for all art museums and enhancing the quality of the audience experience. The results were dramatic: as energy needs were significantly reduced, hundreds of thousands of dollars in cost savings were realized—critical funds that could be funneled back into mission-centric exhibitions and programs.

"It takes a variety of ideas and a willingness to take risks to embrace and implement these new and innovative technologies," says Bintz. "Our belief in this from the very beginning has paid off significantly, as our efforts have reduced the electrical usage in the main building by 79 percent from 1992 to 2012."

"What prompted the initiatives was simple," says Bernard. "We needed to reduce costs without compromising gallery conditions. It only took two months for some of the changes to start paying for themselves. We've achieved great savings while maintaining the highest standards for our collection and our visitors."

ON THE GROUND—AND IN THE AIR

Energy-efficient alternatives are woven throughout the entire museum and are evident from the first moments of any visit. One of the most recent additions is a new 360-kilowatt-hour solar canopy over the main parking lot. The museum had previously installed solar arrays on the roof of the main building of the museum. (Because of the museum's location in a neighborhood on the National Register of Historic Places, the solar panels were mounted flat against the roof.) Together the solar arrays on the museum roof and the parking lot account for one of the larger solar installations in the state of Ohio. On average they provide over half the energy needs for the entire main building.

"Give us a clear day in January at high noon







Above: The TMA converted its first gallery to LED lighting in October 2013 for the temporary exhibit "Fresh Impressions: Early Japanese Modern Prints."

and these panels can generate their full kilowatt capacity," says Bernard. "But even when the panels aren't operating at maximum capacity, combined with our other energy reduction tactics, there are days when we never have to go on the grid. For a 100-year-old building to have zero net electricity use from the power grid while occupied is pretty significant."

Exterior lights on the terrace and in the sculpture garden have been upgraded to highefficiency output, and though the number of lights has dramatically increased, the electrical demand has been reduced. When you walk in the front door of the main building, high-efficiency fluorescent and LED lights greet you in the café, offices and restrooms. Think LED and you may not think museum-quality lighting. But as

96 on a scale of 100.

New incandescent lighting in the Peristyle—one of the most stunning concert halls in the country—and in the museum store has also drawn attention from visitors and staff alike.

Architectural details and the painted frieze of Greek citizens in the Peristyle are now more effectively illuminated with one 40-watt fluorescent fixture. And by doubling the amount of light, displays in the store increasingly capture shoppers' attention, while cutting consumption.

Under the hood, the museum added four clean-energy microturbines to its sustainability arsenal in 2003—the first microturbine installation in the state. Not only do these combined heat and power units produce heat from hot water and burn natural gas to efficiently and

In May of 1992 the museum's electric bill was \$53,000. In May of 2013 it was \$5,000.

technology has improved, LED lights can now enhance viewing art. Bernard's team has been on the cutting edge of testing preproduction LED lights in gallery and gathering spaces for some time, thanks to partnerships with lighting manufacturers. Last fall, for the first time, LED lights were installed throughout an entire gallery for the special exhibition "Fresh Impressions: Early Modern Japanese Prints." The dazzling woodblock prints popped, and because the bulbs emit zero heat or UV light, the works on paper were well protected while the museum saved energy. Just as important, LED lights have a decadelong lifespan, minimizing replacement costs.

"Multiply that by a thousand, and it's obvious why the new lights are more efficient, from both the product cost and the labor standpoints," says Bernard.

On the color rendering index—which gauges a bulb's ability to mimic natural light and reflect true color—TMA's LED lights currently score a cleanly generate electricity, they also recycle turbine exhaust to maintain the museum's mandatory 70/50 temperature and humidity levels.

"Anyone can generate electricity," says
Bernard. "It's harder to generate power and reclaim the engine heat—but by design we've been
able to do that, while at the same time reducing
our greenhouse gas emissions by 70 percent."

The microturbines, which work like mini jet engines, generate energy on site—lowering the museum's carbon footprint and offering a big advantage for the security and protection of the collection in case of a grid outage.

In 2012 the Glass Pavilion—home to TMA's glass collection and glassmaking studios—also benefited from new microturbines and natural gas chillers, with the heat from the glass hot shop redirected to warm the pavilion in the winter and microturbine waste from electricity generation used to heat and cool the building as needed. The museum plans to invest in

additional microturbines in the future.

Alongside the microturbines, variable frequency drives (VFDs) power all of the museum's fan operations at a lower-than-standard speed, which results in even more energy savings.

RUNNING THE NUMBERS

Adding it all up, the museum has reduced its electricity consumption by 79 percent since 1992 as a result of its solar installations, lighting upgrades and integration of microturbines, chillers and VFDs. Bernard likes to share one concrete example of how energy conservation equals real savings: in May of 1992 the museum's electric bill was \$53,000; in May of 2013 it was \$5,000. That monthly savings makes a significant difference in the museum's operations budget and fiscal bottom line.

The return on investment of the microturbines and VFDs alone has been impressive: the microturbines (\$150,000 each) paid for themselves over four years of electricity savings. The \$4,000 price tag for the VFD equipment was recouped in two months of energy savings. The first in the state of Ohio, the museum's net metering agreement with power company First Energy allows TMA to pay only for what it consumes and return surplus energy back to the grid.

"When we produce more power than we use, the meter goes the other way because we're putting electricity back on the grid," says Bernard. "We pay the net difference for what we use—and get credit for what we give back."

Though the museum was unable to take advantage of energy efficiency tax credits due to its nonprofit status, over the years TMA has received numerous grants in support of its energy reduction goals. For example, the first two phases of the solar installations, in 2008 and 2010, were funded by the Ohio Department of Development, with the balance paid by the museum. Phase two was also paid for in part with funds from the American Recovery and

Reinvestment Act that were allocated through the Ohio Department of Development state energy plan program. In 2012, the solar canopy over the main parking lot was funded by private investors in a power purchase agreement. The microturbines were funded by a grant from the Ohio Department of Development and TMA capital funds.

Ancillary green strategies that TMA has introduced include electric vehicle charging stations in the main parking lot and an organic garden that provides produce for the museum's café and in-house catering service.

"Our guiding principle through this journey has been to save money by saving energy," said Bintz. "In doing so, the museum is able to continue to follow museum best practices for the collection, preserve jobs and be responsible environmental stewards, while passing on the savings to the exhibitions and programs that support our educational mission. It's a powerful win-win."

The process is ongoing as the museum continues to analyze and fine-tune its energy reduction methods and goals. An exemplar in the field and beyond, TMA's sustainability practices serve as a model for other museums. Bernard and Bintz frequently receive queries from administrators and facility managers at institutions around the country seeking guidance on how to achieve similar results by incorporating new technologies.

"Just as this institution is an innovation leader in education and teaching the importance and relevance of visual literacy, in order to best serve our audiences and flourish for generations to come, we must be an innovator in the management of the beautiful facility we have inherited," says Bintz. "It's who we are—as a museum and as the cornerstone of art and culture in our community." «

Stephanie Miller, a 15-year museum veteran, is now an arts public relations, publications and strategy consultant with Blue Water Communications, with offices in Ohio and Florida.

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A sneak peak at the 2014 TrendsWatch and

16-year-old Simone Batiste's Advocate Story

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- **p. 10:** Kara Walker, *The Emancipation Approximation* (Scene #18), edition 7/20, 1999–2000. Collection of the Jordan Schnitzer Family Foundation © Kara Walker.
- p. 11: (top) Frida Kahlo, Self Portrait with Monkey (1938). Collection Albright-Knox Art Gallery, Buffalo, NY. Bequest of A, Conger Goodyear, 1966, © 2014 Banco de México Diego Rivera & Frida Kahlo Museums Trust, Mexico, D.F./Artists Rights Society (ARS), New York; (middle) Golden Poison Frog (Phyllobates terribilis) © AMNH/T. Grant; (bottom) John Dougtas Powers, latu (2011), Photo courtesy MIT Museum.
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- **p. 13:** Victor Chavet, *Le Louvre de Napoléon III* (1857), Musée du Louvre, Paris, Inv. 20040, Photo by Alfredo Dagli Orti / The Art Archive at Art Resource, NY.
- **p. 14:** (top) Herman Leonard, *James Moody-NYC-1951*; (middle) In foreground: John Bisbee, *Hearsay*, In background: John Bisbee, *Floresco*, On display in the Cynthia O, and Donald B, Murphy Gallery, Pizzagalli Center for Art and Education, Shelburne Museum; (bottom) photo of Richard Meler by Joe Schildhorn (Billy Farrell Agency).
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- p. 64: Nontanga Manguthsane, Kalipha Ntobela, Sthembile Majola, Tshengi Duma, Ntombephi Ntobela, Thembani Ntobela, Nonhlakanipho Mndiyatha, *The African Crucifixion* (2009), Cathedral of the Holy . Nativity, Pietermaritzburg, South Africa, Photograph by Susana A., Raab, Anacostia Community Museum.



"The webinar was an incredible experience. Your program touched on some topics that are familiar and others that are not, with a great deal of compelling and significant information passed.

Again, thank you for the opportunity."

—Denise Stangl, Lehigh University Art Galleries, Zoellner Arts Center, Bethlehem, PA

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Live webcast: Planning and Delivering Effective Presentations (March 19)

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Live webcast: Careers in Museum Education* (April 9)

Online Town Hall: TrendsWatch 2014 (April 17)

Live webcast: Rights and Reproductions* (April 23)

Live webcast: **Recruiting, Selecting and Placing Volunteers*** (April 30)

MAY

Live webcast: First-Time Annual Meeting Attendees Welcome (May 7)

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The trends examined this year are:

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Technological advances that combine all five sensory experiences are becoming more common and more effective. Will people become less interested in traditional experiences that appeal primarily to one sense at a time?

A Geyser of Information: Tapping the big data oil boom

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Privacy in a Watchful World: What have you got to hide?

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What's Mine Is Yours: The economy of collaborative consumption

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Robots! Are Rosie, Voltron, Bender and their kin finally coming into their own?

Are we on the brink of a robot takeover of the world, long forecast by futurists?

Look for details on obtaining your copy on the website (aam-us.org) and through AAM member publications, including *Aviso*, *The Weekly*, *Museum* magazine and others.

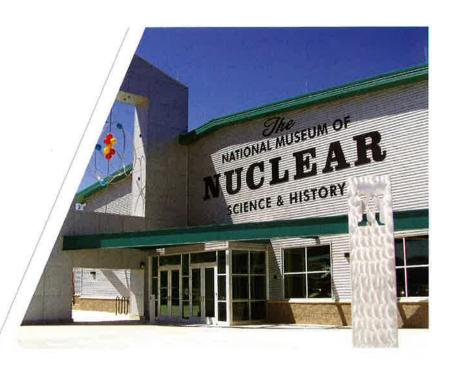


National Museum of Nuclear Science & History

First Accredited:
October 2013

Annual Budget: \$1.8 million

Staff: 22



The National Museum of Nuclear Science & History is the nation's designated nuclear science and history center and the only institution of its type that has attained AAM Accreditation status. Located in New Mexico, the epicenter of milestone achievements of nuclear science, we had always been proud of our museum's family-oriented programs, well-developed collections, thoughtful exhibits, and committed staff, volunteers and board. Yet we felt it was important to see if our operations conformed to the highest standards of the museum field and, frankly, to see if we were on a par with the most respected museums in the country. Accreditation confirmed that we are among those superior museums that have earned this distinction.

Accreditation also assured us that our community appreciates our endeavors, and that we are operating at a level of confirmed excellence. This, in turn, inspires us to complete the capital campaign launched in conjunction with the opening of our new facility in 2009.

With renewed vigor and a true sense of accomplishment, we are poised to make our museum an ever-improving organization. The journey to achieve accreditation validated our role as stewards of the world-changing stories in our shared nuclear history. —Jim Walther, Director

PEOPLE

NEW JOBS

Jacqueline W. Franey to director of development and Gavin Delahunty to Hoffman Family Senior Curator of Contemporary Art, Dallas Museum of Art,

Sandra M. Jones to director of communications and digital strategy, American Writers Museum Foundation, Chicago.



Julie Decker to director, Anchorage Museum at Rasmuson Center, Alaska



Alison Gass to deputy director, Eli and Edythe Broad Art Museum, East Lansing, Michigan.

Ginny Kollak to curator of exhibitions, Philip and Muriel Berman Museum of Art, Ursinus College, Collegeville, Pennsylvania.

Sam Wegner to executive director, Willamette Heritage Center, Salem, Oregon.



Emily Ballew Neff to director, Fred Jones Jr. Museum of Art, Norman, Oklahoma



Becky Dunham to curator, Plains Art Museum, Fargo, North Dakota.



Julia Kaganskiy to director of incubator for art, technology and design, New Museum, New York,

Katherine M. MacDonald to director, Old Colony Historical Society, Taunton, Massachusetts



Beverly Adams to adjunct curator of Latin American art, Blanton Museum of Art, Austin, Texas.

Nora Maroutis to director of philanthropy, Worcester Art Museum, Massachusetts.

Lori Urso to executive director, Slater Mill Museum, Pawtucket, Rhode Island.

Nora Atkinson to Lloyd Herman Curator of Craft, Smithsonian American Art Museum's Renwick Gallery, Washington, DC



Will Ticknor to director of museum resources, New Mexico Department of Cultural Affairs, Santa Fe.

David L. Morse to board of trustees, Corning Museum of Glass, New York.



Pedro Moura Carvalho to deputy director for art and programs, Asian Art Museum, San Francisco.

Susan Glasser to president and CEO, Fredericksburg Area Museum & Cultural Center, Virginia.



Patty Isacson Sabee to CEO and director, EMP Museum, Seattle.



Laura A. Foster to executive director, Frederic Remington Art Museum, Ogdensburg, New York



Darsie Alexander to executive director, Katonah Museum of Art, New York



Sara Cochran to associate director, curator and educator, Scottsdale Museum of Contemporary Art, Arizona.

Philippe Vergne to director, Museum of Contemporary Art, Los Angeles.

Toni Guglielmo to assistant director, Getty Leadership Institute at Claremont



Deborah J. Lee to director of development, The Hyde Collection, Glen Falls, New York, Graduate University, Claremont, California.

Zachary Levine to curator, Jewish Historical Society of Greater Washington, Washington, DC

James Voorhies to John R. and Barbara Robinson Family Director, Carpenter Center for the Visual Arts, Harvard University, Cambridge, Massachusetts. James Gerhardt to chief advancement officer, National Museum of American Jewish History, Philadelphia,



J'Laine Newcombe to chief registrar, Virginia Museum of Fine Arts, Richmond.

Hal Spackman to executive director, Sitka Historical Society & Museum, Alaska.

KUDOS



James "Jimmy" Coleman, Jr., president, board of directors, National Coast Guard Museum Association, has received the 2012 Spirit of Hope award for his dedication and leadership in establishing a National Coast Guard Museum that honors the commitment, accomplishments and sacrifices of Coast Guard men and women. Coleman was among six recipients of the award, which is given to each branch of the military. Secretary of Defense Chuck Hagel presented the awards in November at the Pentagon Library in Washington, DC.



The Walker Art Center's executive director, **Olga Viso**, has been appointed by President Barack Obama to the National Council on the Arts, the advisory body of the National Endowment for the Arts.



The Historic Naval Ships Association awarded Mary Ryan, curator, and Jennifer Heinzelman, collections manager, of the Naval History and Heritage Command (NHHC) Naval Undersea Museum in Keyport, Washington, the Henry A. Vadnais Award for outstanding service to their organization. Danelle Feddes, senior curator of the Puget Sound Navy Museum in Bremerton, Washington, was awarded the Ship Maintenance/ Preservation/Exhibition Award. Karin Hill, director of education and public programs at NHHC's National Museum of the U.S. Navy in Washington, DC, was honored with the President's Special Award.

IN MEMORIAM



Douglas Bradley, curator of the arts of the Americas, Africa and Oceania at the University of Notre Dame's Snite Museum of Art, passed away in December 2013 from complications related to non-Hodgkin's lymphoma.

Over a 34-year career at the museum, he developed and interpreted the Pre-Columbian, Spanish Colonial and African art collections. He also assembled small, choice collections of Haitian Voudou banners and American Southwestern prehistoric ceramics. The collection of Olmec art that Bradley assembled is considered by many scholars to be the finest in the nation—perhaps the best outside of Mexico City. He worked with colleagues in the physics department to conduct research on the composition of Pre-Columbian ceramic figurines, utilized reflective ultraviolet photography to detect paint residue on artworks and traveled to Mesoamerican archeological sites.

Bradley was known for his belief that artworks are discrete physical objects through which much can be discerned through close looking, tactile exploration, and thorough knowledge of materials, fabrication processes and the effects of time on appearance. Co-workers recall him as

an affable colleague who was always game for a museum road trip and ever ready to share delights of Mexican cuisine, especially chocolate, hot peppers and tequila.

Thomas Vaughan, the longtime executive director of the Oregon Historical Society, died December 6, 2013, of congestive heart failure in Portland. He was 89. During his 35-year tenure, Vaughan led the development of the Oregon Historical Society into a premier organization by creating high-quality exhibits, establishing international connections and leading local historic preservation efforts.

Following the historical society's exhibit on British explorer James Cook, who traveled along the Oregon Coast, Queen Elizabeth named Vaughan as a Commander of the Most Excellent Order of the British Empire. Vaughan also helped bring a copy of the Magna Carta to the Oregon Historical Society for a 1986 exhibit. He led the campaign to establish the Oregon Historical Society's current home in the South Park Blocks in downtown Portland and was also named an Oregon Historian Laureate.

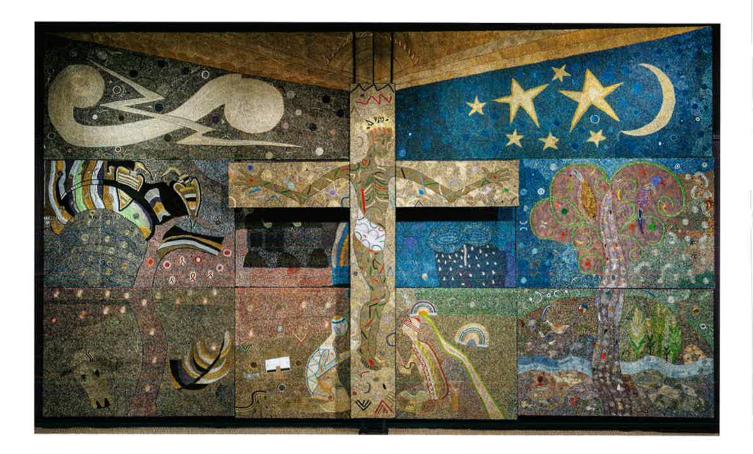
Vaughan was born in Seattle and enlisted in the U.S. Marine Corps from 1943–45. He graduated from Yale University in 1948 with a bachelor's degree in British history and from the University of Wisconsin in 1951 with a master's degree in American history.

IMLS RELEASES 2013 ANNUAL REPORT

The federal Institute of Museum and Library Services has released its annual report, highlighting its many successes throughout 2013. You can read the full report at imls.gov/assets and help support funding for this important agency by customizing a letter to Congress on our advocacy website, congressweb.com/aam.

STRONG SHOWING IN CONGRESS IN SUPPORT OF CHARITABLE GIVING

Great news on our advocacy efforts (with the broader nonprofit community) in support of preserving the full scope and value of the charitable deduction. A bipartisan group of 33 senators have signed a letter, spearheaded by Sens. Ron Wyden (D-OR) and John Thune (R-SD), to the Senate Finance Committee leadership. Thank you to everyone who joined the chorus this fall as part of the Charitable Giving Coalition advocacy campaign. We encourage South Dakotans to say thank you to Sen. Thune and Oregonians to say thank you to Sen. Wyden. And if one of your senators signed the letter, please take a moment to thank them through their website or on social media using #ProtectGiving.



Thousands of colorful Czech glass beads are sewn onto seven panels of fabric for *The African Crucifixion*, a work commissioned for the Cathedral of the Holy Nativity in Pietermaritzburg, South Africa. It's one of about 30 works featured in "Ubuhle Women: Beadwork and the Art of Independence." Ubuhle, meaning "beautiful," also refers to an artists' community in rural KwaZulu-Natal, South Africa. Local resident Bev Gibson and master beader Ntombephi Ntombela established the community of women, who work and live together, in 1999 to give them a way to provide for their families via art. The Ubuhle women use black fabric as a canvas for their intricate works, which reimagine the longstanding beading tradition as a contemporary art form. To Sept. 21, 2014. **Venue:** Smithsonian's Anacostia Community Museum, Washington, DC.

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