Museum of Science®

SPRING 2011

Investing In Innovation

Reimaging the Stars
The New Charles Hayden Planetarium Shines

Explorations
The US: From Sports Nation to Education Nation?

Museum Factor
Teacher Gwen Shipley Gains "Tricks of the Trade" at the Museum

A New Vision For The Museum

Since joining the Museum of Science in 2003, I have been astounded time and again by the passion and energy of our board of trustees' commitment to the Museum and to science education. In the past three years, our trustees and overseers have evaluated our mission, developed a new vision (see page 27) and master plan for the coming decade, and focused attention on building a culture of philanthropy. With their dedication and support, we have opened exciting new exhibits, renovated the Charles Hayden Planetarium, and launched successful K – 12 engineering curricula nationwide.

So it is with great excitement that I join the boards of trustees and overseers and our campaign co-chairs and executive committee to announce the public launch of a **$250 million comprehensive capital campaign** for the Museum of Science, the first in our history. Our goal is ambitious: To grow and sustain support for a world-class Museum that tells the stories of how the natural and human-made worlds intersect.

True innovation is about vision and big ideas. It's about creativity and also taking risks. Innovation is no longer thinking outside the box—it's about starting a whole new box. And innovation is about leading. For generations, the Museum of Science has been a shining example of how true innovation and strong leadership can transform our understanding of science and technology and shape our lives and world.

– John Fish, Chairman and CEO, Suffolk Construction

In these pages, you will learn about just a few of the campaign's objectives—to build exhibits like *What Is Technology?* and *Hall of Human Life*; to transform our 60-year-old building into a greener, more welcoming facility; and to develop new programs that celebrate innovation and foster discussion on challenging scientific questions. Together with our benefactors and strategic partners, we will realize our vision to create a new type of science center—one that reaches the broadest possible audience with exciting programs, timely exhibits, and bold initiatives that attract and engage people from around the world.

This is an invigorating time in the life of the Museum of Science, and we are grateful to the many friends and benefactors who have supported us on our journey. I look forward to sharing more information about the campaign in the months ahead, and I invite you to join us as we invest in innovation in many new ways.

Ioannis Miaoulis
PRESIDENT AND DIRECTOR

ABOUT THE COVER IMAGE

The Zeiss Starmaster projector is a Museum of Science investment in innovation at the new Charles Hayden Planetarium, now the most technologically advanced digital theater in New England.

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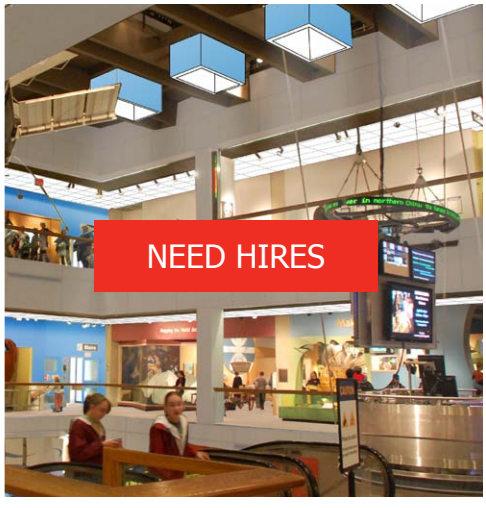
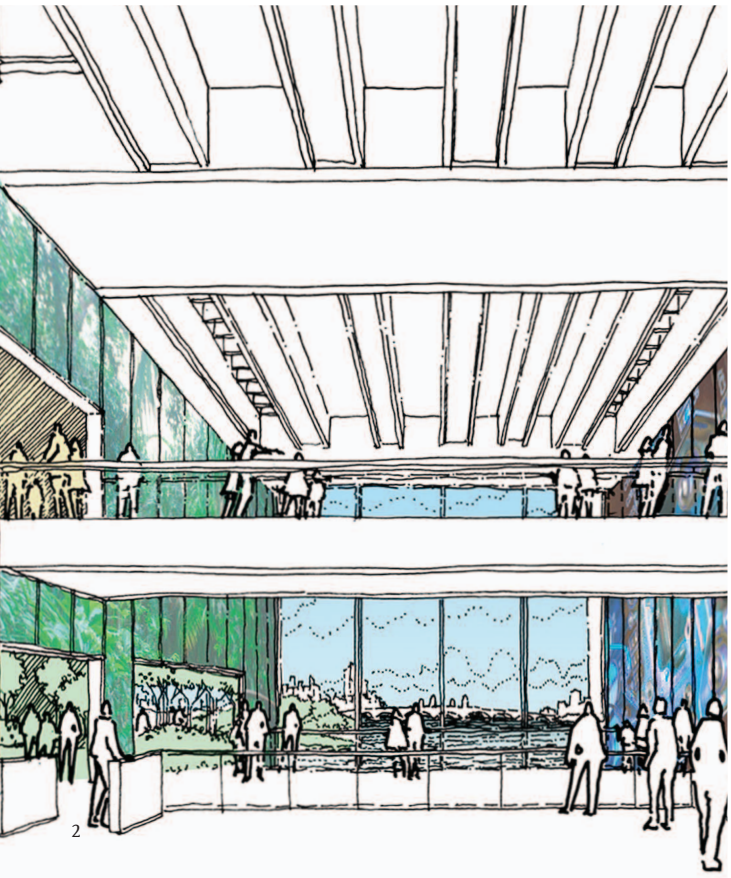


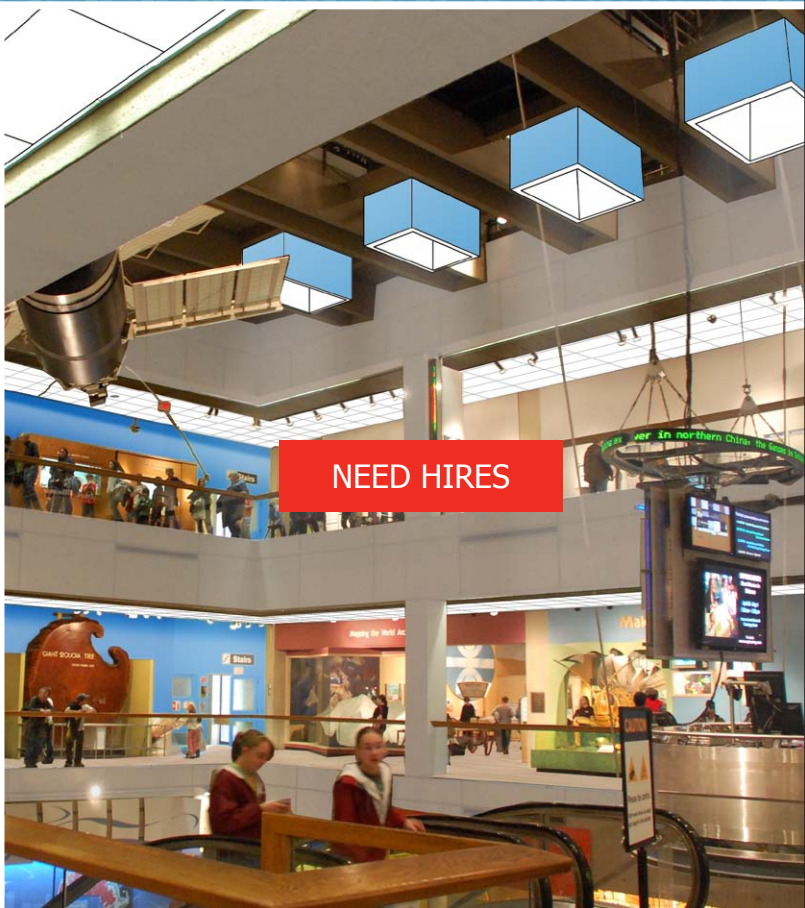
Museum of Science

Transforming the Nation's Relationship with Science and Technology

Investing In Innovation

The Museum of Science Announces $250 Million Campaign





NEED HIRES

Science and technology are evolving faster than the blink of an eye, and institutions like the Museum of Science must constantly adapt to stay relevant to new generations of learners. In its 181-year history, the Museum has reinvented itself many times—most recently in the late 1990s—but never before with the power of a major fundraising campaign to back its efforts.

We are so often looking for inspiration and hope about making good things happen in the world. New exhibits at the Museum will embody the explosion of international innovations and excite people to make a difference.

— Judy Pagliuca, Overseer

With the launch of the public phase of a $250 million dollar capital campaign that has already raised $150 million in its quiet phase, the Museum seeks to support its vision to deepen the public's relationship with science and technology through exhibits and programs, new partnerships in the science and technology communities, and the development of engineering curriculum for schools throughout the world.

"We think about science and technology differently now than we did just 10 years ago," says Museum president and director Ioannis Miaoulis. "And the Museum of Science must reflect this new thinking in the way we present ourselves."

To that end, the campaign supports exhibits, programs, and facility improvements that explore the duality of our natural and human-made world. According to Paul Fontaine, vice president of education, "engineering represents the common language between the natural and designed worlds. The reinvented Museum of Science will be a place to learn that language. It will offer hands-on, 'keystone' experiences relevant to real-world problems."

For example, the current Blue and Green Wings will be transformed into the Designed and Natural Worlds respectively, and the Museum's soaring lobby space will invite visitors into these worlds from the moment they enter. Sustainability initiatives will not only reduce the building's carbon footprint but will also teach the public about green technologies.

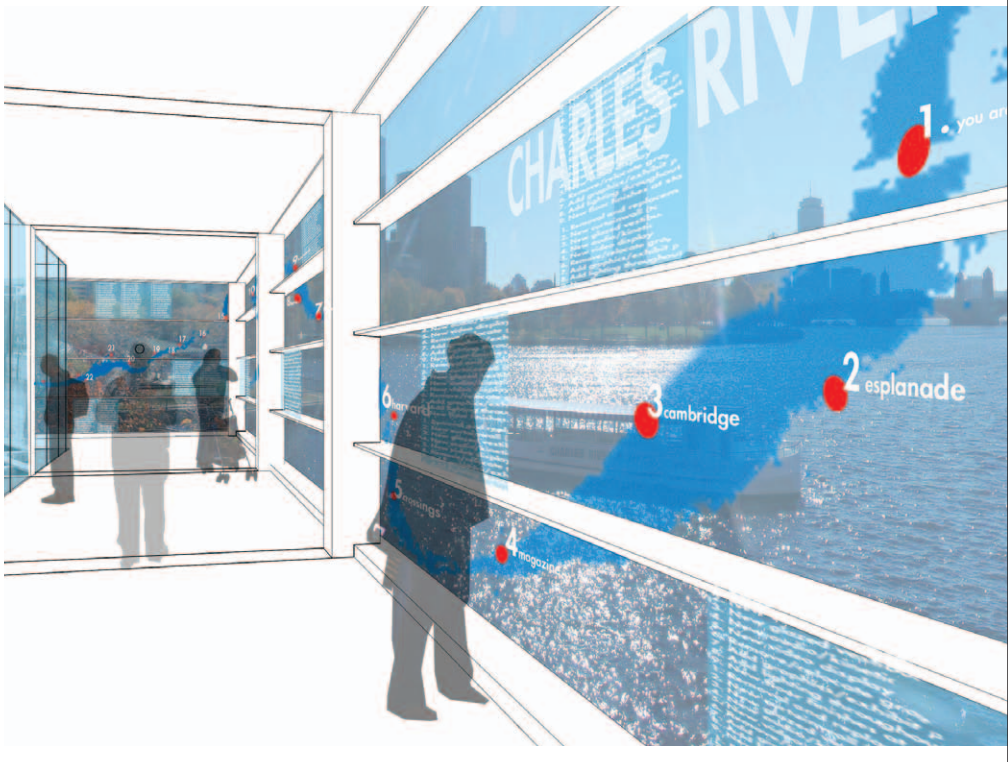
An innovative approach to new exhibits and programs is one driving force behind the capital campaign. The state-of-the-art *Hall of Human Life* will revolutionize the way the public engages with new biology. *What is Technology?* will enhance technological literacy through the use of ever-evolving content and community engagement. Other existing exhibits, such as *New England Habitats*, will be renovated and enhanced with the new *Charles River Gallery*, reflecting how the human-made world—particularly in and around the Charles River basin—has impacted regional wildlife.

- (*facing, top)* Rendering of the Museum exterior featuring a gray water storm collection system and vegetative walls
- (*facing, bottom left)* The renovated lobby will showcase graphic/electronic wall scrims identifying the natural and designed worlds
- (*facing, bottom right)* Infusing natural light and green building materials will transform the Blue Wing

Through innovative exhibits, program offerings, physical improvements, and outreach efforts, the Museum's capital campaign will significantly transform the institution over the next decade. Everyone has a role to play in the world of science and technology—as learners, as future scientists or engineers, and as stewards of our planet. By deepening the public's relationship with science and technology through efforts nationwide and abroad, the Museum of Science will redefine the role science centers play in people's lives.

The love of science is a lifelong journey—and so the Museum of Science must be a destination that excites visitors. This eminent facility must affirm for our children that the scientific journey is worth exploring.

– Kurt Melden, Overseer



Innovative thinking about the role 21st-century science museums play in public engagement also drives the campaign. Traditionally, science museums have been geared toward young people. Miaoulis envisions a new approach, one that "involves adults in influencing policy and in engaging them in debates about the scientific issues of the day."

For example, campaign funds will allow the Museum to expand its offering of community forums, such as those recently developed around the exhibit *RACE: Are We So Different?* (see page 24). Similarly, the first *Invented Here!*, event held on February 15, honored New England's newest and most innovative technologies—and their inventors.

According to Miaoulis, the Museum is conceiving novel events like *Invented Here!* to "interest adults in engineering, technology, and problem solving. We want to engage adults—through programming, exhibits, and curriculum—in the same way the Museum of Science has reached children for years."

The Museum's National Center for Technological Literacy® (NCTL®)—launched with funds from the quiet phase of the campaign—has already been highly successful in enhancing K – 12 science, technology, engineering, and math (STEM) curricula. Endowment raised during the campaign will allow NCTL to continue its leadership in integrating engineering into school curricula and advocating on both state and federal levels on behalf of science education worldwide. ■

› *(facing)* Rendering of the new Charles River Gallery

› *(left)* Robin Young, host of NPR's Here and Now and emcee for Invented Here! with John McBean, co-inventor of Myomo; Dr. Yet-Ming Chiang of A123; Kailas Narendran, co-inventor of Myomo; Ioannis Miaoulis, president and director, Museum of Science

Celebrating New England's Inspiring Inventors: *Invented Here!*

On February 15, 2011, the Museum of Science honored three local inventors and their groundbreaking technologies in an inaugural event *Invented Here!* Developed in collaboration with the Boston Patent Law Association, *Invented Here!* honors New England's most innovative technologies and celebrates the stories behind the inventors and their creations. It also showcases New England as an international hub of innovation.

These inventors are a great source of inspiration for adults and children alike. Their stories demonstrate that creativity and determination, along with science, math, and engineering skills, are the drivers of technological innovation.

This year's honorees included:

Oliver Peoples (Arlington, MA): High-performance bioplastic, developed for Metabolix. The bioplastic, called Mirel™, is biology-based and biodegradable, and is being used in consumer goods, packaging, and agricultural and marine applications.

Yet-Ming Chiang (Framingham, MA): Improved lithium-ion batteries, developed for A123 Systems. These batteries deliver higher power, longer life, and greater safety performance, and are being used in automotive applications, power tools, medical devices, and other high-powered electronics.

John McBean & Kailas Narendran, (Providence, RI): Powered orthotic device for stroke victims for Myomo. The first wearable robotic device to help restore arm movement to stroke survivors, the Myomo Neuro-robotic System combines advances in robotics and neuroscience.

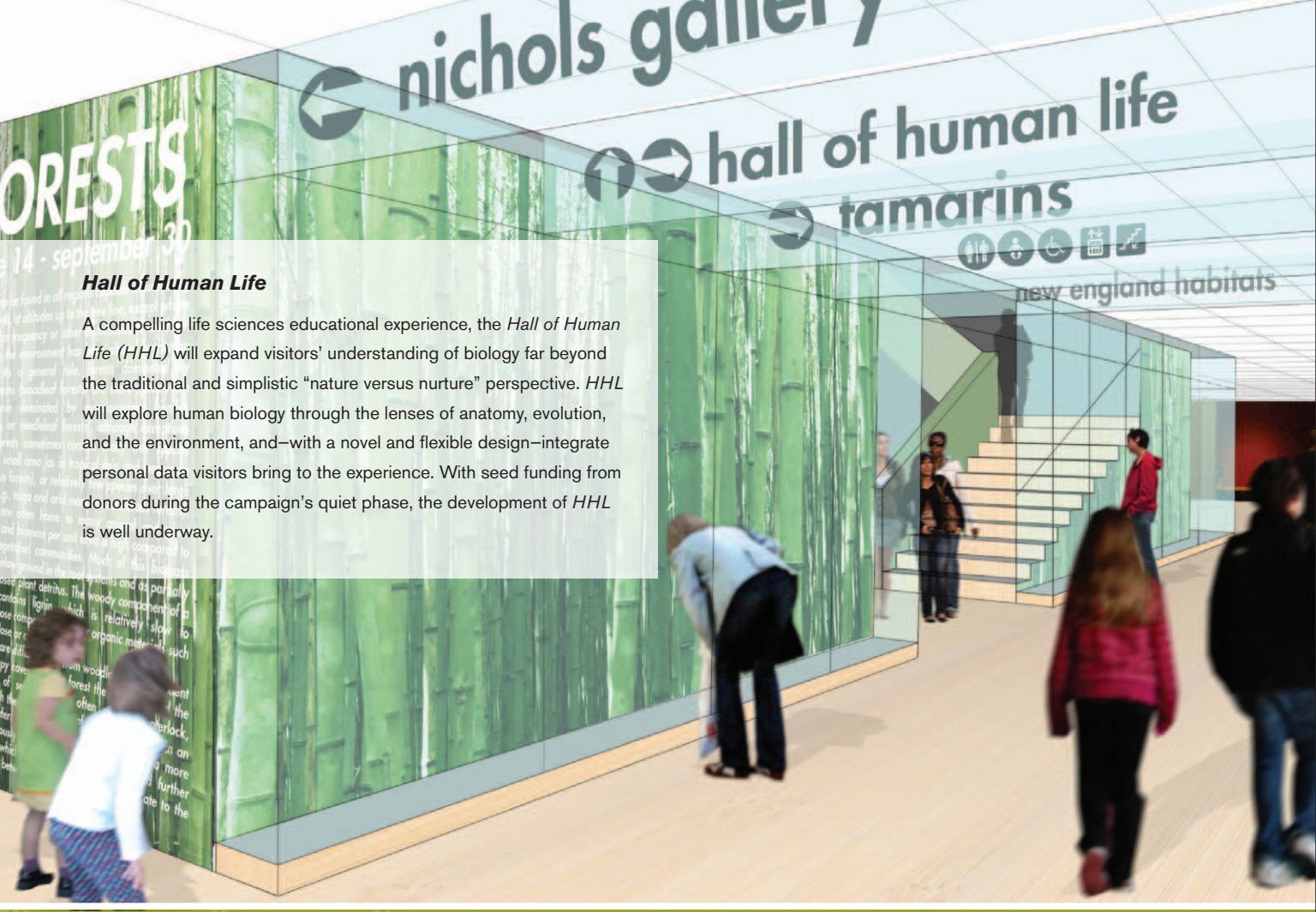
Candidates for *Invented Here!* were selected from more than 70 nominees submitted by corporations, law firms, research labs, and colleges and universities throughout New England. The three honorees were chosen from a group of 12 finalists (mos.org/breakthroughs) representing a range of fields, including bio, green, wireless, medical, optics, and nano technologies.

New applications for science and technology are emerging every day—and celebrating these innovations is of critical importance. At the Museum of Science, signature programs like *Invented Here* not only honor invention but also create a community where we can experience the ever-evolving scientific world.

— Jeffrey Beir, Trustee

The Museum of Science is a portal into science, technology, engineering, and math (STEM) education. To me, championing STEM education is the Museum's most important mission—and NCTL is a powerful vehicle that gives the Museum reach well beyond its walls.

— Michael Champa, Trustee



Hall of Human Life

A compelling life sciences educational experience, the *Hall of Human Life (HHL)* will expand visitors' understanding of biology far beyond the traditional and simplistic "nature versus nurture" perspective. *HHL* will explore human biology through the lenses of anatomy, evolution, and the environment, and—with a novel and flexible design—integrate personal data visitors bring to the experience. With seed funding from donors during the campaign's quiet phase, the development of *HHL* is well underway.

Museum of Science $250 Million Capital Campaign

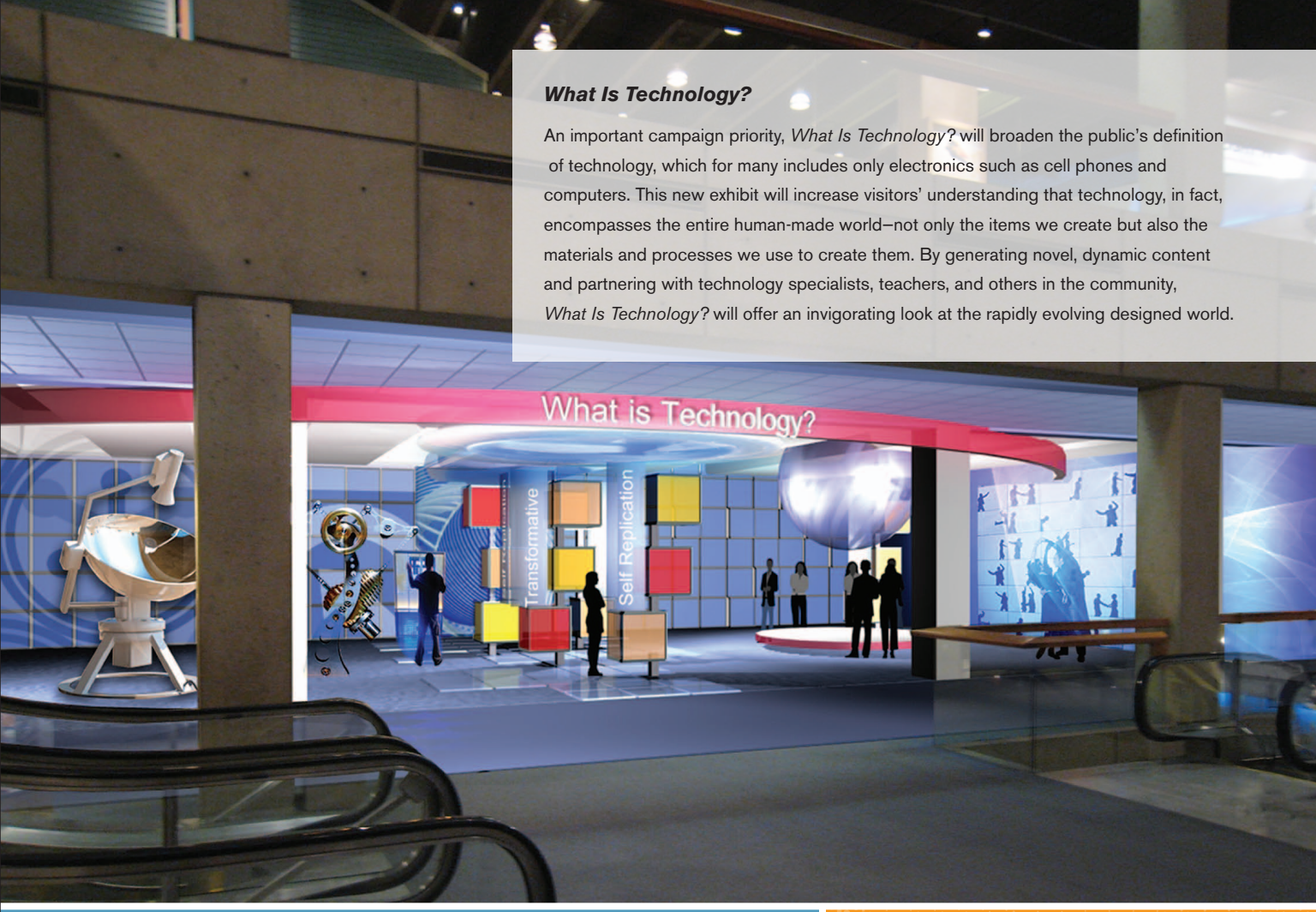
THE QUIET PHASE

Since 2004, the Museum has raised $150 million from more than 10,000 individuals, corporations, and foundations. This support has helped to fund a number of new initiatives and improvements, including:

3-D Digital Cinema (launch and renovations)
Art and Science Gallery **NEW**
Beyond the X-Ray (redesigned)
Butterfly Garden **NEW**
Cahners ComputerPlace (renovated)
Catching the Wind **NEW**
Charles Hayden Planetarium (renovation)
Colossal Fossil: Triceratops Cliff **NEW**
Design Challenges **NEW**
Gordon Current Science & Technology Displays **NEW**
Hall of Human Life (seed funding)
Innovative Engineers **NEW**
Mugar Omni Theater (renovations)
Nanotechnology **NEW**
National Center for Technological Literacy® **NEW**
Science in the Park (renovation)
Sophia and Bernard M. Gordon Wing **NEW**
WeatherWise **NEW**
Wind Turbines **NEW**

QUIET PHASE TOTALS

Core Museum	**$65 Million**
Life Sciences	**$6 Million**
NCTL	**$37 Million**
Building	**$9 Million**
Annual Fund	**$16 Million**
Other Unrestricted Support	**$17 Million**



What Is Technology?

An important campaign priority, *What Is Technology?* will broaden the public's definition of technology, which for many includes only electronics such as cell phones and computers. This new exhibit will increase visitors' understanding that technology, in fact, encompasses the entire human-made world—not only the items we create but also the materials and processes we use to create them. By generating novel, dynamic content and partnering with technology specialists, teachers, and others in the community, *What Is Technology?* will offer an invigorating look at the rapidly evolving designed world.

THE PUBLIC PHASE

Moving forward, the Museum's campaign seeks to raise an additional $100 million to significantly transform the Museum over the next decade.

EXHIBITS AND EDUCATIONAL PROGRAMS — **$40.7 Million**

- Exhibits and Programs
- National Center for Technological Literacy
- Exhibit Development and Innovation Fund

FACILITY TRANSFORMATION — **$33.3 Million**

- Natural and Designed Worlds—wing renovations
- Reconfigured/redesigned lobby and exhibit space
- Sustainability/green initiatives
- Infrastructure improvements

ENDOWMENT — **$15 Million**

ANNUAL FUND — **$11 Million**

Technological innovation is the lifeblood of the US economy—an economy whose workforce is 50% women. A strong endowment ensures the Museum will continue to inspire young women to pursue STEM careers for generations to come.

— Jaishree Deshpande, Trustee

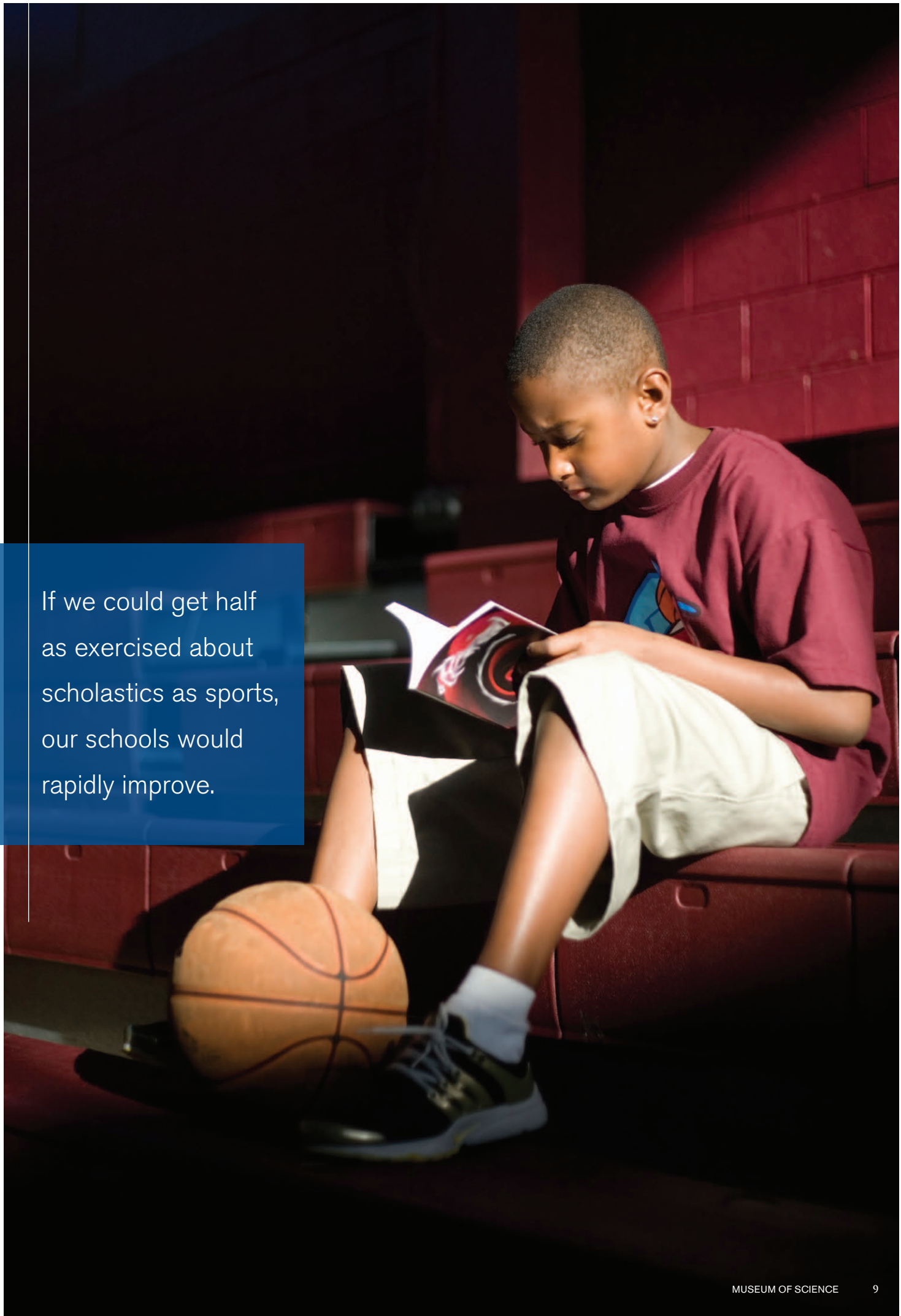
The United States is a sports-obsessed nation. The World Series, the Super Bowl, and the NBA finals occupy a large portion of our nation's mindshare for months. Add collegiate and high school sports and you've got game—big time—on the brains of Americans.

The US: From Sports Nation to Education Nation?

By Milton Chen, PhD excerpted from his new book
Education Nation: Six Leading Edges of Innovations in our Schools

If we could get half as exercised about scholastics as sports, our schools would rapidly improve. Many communities take their high school sports very, very, seriously—sometimes, too seriously. I once asked a high school science teacher why his school had seen eight principals replaced in ten years. Poor student achievement? Low faculty morale? His answer: "We haven't had a winning football team."

Those who want to reform our schools should consider the lessons of sports for learning. While we may not be very smart about what real learning is, we're quite bright when it comes to sports. Let's take the example of what we know about teaching and learning basketball and apply those lessons to schools. The difference between what textbooks can teach and what "authentic learning" is will quickly become apparent.



If we could get half as exercised about scholastics as sports, our schools would rapidly improve.

I learned this analogy many years ago from the late eminent science educator Dr. Roger Nichols, who served as director of the Museum from 1982 – 1986. Dr. Nichols felt so strongly about reaching children early with the excitement of science that, toward the end of his career, he gave up his faculty position at Harvard Medical School to lead the Museum of Science.

As a young assistant professor of education at Harvard, I took my graduate students to visit the Museum of Science and to meet Dr. Nichols. In discussing the need for hands-on science learning, Nichols had us imagine parents asking their children a familiar question: "So, what did you learn in school today?" The child shrugs and says, "We learned to play basketball." The parents then ask, "How did you do that?" The child answers, "Well, we sat in the gym and the teacher passed out these books and we turned to chapter one, about passing the basketball. We learned there are three types of passes–the bounce pass, the chest pass, and the one-handed pass."

"OK," parents say, "What happened next?" The child continues, "We read the next chapter about dribbling. And another chapter on shooting. We learned there's the set shot, the bank shot, and the jump shot." After a few minutes, most parents, growing increasingly exasperated, challenge: "But did the teacher ever give you a basketball and take you on the court to play?" "No," the child sighs. "We just read the book until the bell rang." Nichols said that parents in America would never stand for teaching sports by memorizing terms and reading about what athletes do. Parents of high school basketball players would march on the principal's office the next day and complain to the school board.

Sports require performing, watching others perform, and observing oneself performing. Sports coaches and athletes routinely make use of videotape analysis of games to improve performance. Yet millions of parents settle for science, mathematics, history, and other subjects taught through rote memorization of vocabulary from textbooks, while their children never get a chance to actively "perform" real science or history.

Science and mathematics education should get students out of the classroom and collecting data in fields and streams, at traffic intersections, and in their larger communities. Students should begin by seeking answers to everyday questions they encounter in their own lives, such as "Where does the water in my house come from? Where does it go to? And how can I measure its quality?" The learning of history should immerse students in original documents, photographs, and music, as the Library of Congress's American Memory collections do so well.

Today, I humbly propose a new national campaign to teach basketball with textbooks. If the ensuing expressions of outrage and demonstrations by parents lead to energetic discussions about active, hands-on, minds-on learning in academic subjects, this short-lived campaign will be very worthwhile. It will make us smarter about learning and move us closer to creating the kind of curriculum an Education Nation needs. ■

MILTON CHEN, PHD, is the senior fellow and executive director, emeritus of The George Lucas Educational Foundation, based in the San Francisco Bay area. The Foundation's website, edutopia.org, includes films, articles, and how-to resources for implementing 21st-century curricula and partnerships. This article was adapted from Dr. Chen's new book, *Education Nation: Six Leading Edges of Innovation in our Schools* (Jossey-Bass), selected as one of the best books of 2010 by the American School Board Journal.

Biology teacher Gwen Shipley knows how to make science fun. Students in her classes link arms to act out the motion of carbon atoms during photosynthesis, watch videos of tapeworms on YouTube, and carry cups of water with holes in them to illustrate the loss of energy between trophic levels.

Teacher Gwen Shipley Gains "Tricks of the Trade" at the Museum

> *(above)* Students in Shipley's Chapel Hill-Chauncy Hall School biology lab

"I love sharing my enthusiasm for biology," she says. "Too often, young people lose their love of discovery and curiosity about the natural world during middle and high school. As a biology teacher, I believe my role is to help foster a love of and respect for the natural world while encouraging my students to pursue careers in science."

A teacher at the Chapel Hill-Chauncy Hall School, a small, private high school in Waltham, Massachusetts, Shipley credits the Museum of Science with fostering her "science is fun" philosophy. Although she has always been enthusiastic about science, earning her BA in biology from Brown University, it was through her work at the Museum that she discovered the joy of sharing her passion with others. "When I worked at the Museum, I was surrounded by people who loved science. For me, that reaffirmed my own fascination with the natural world and encouraged me to share it with the young people who visited," she says.

NEED HIRES

"At the Museum, the idea was always 'show, don't tell.' To me, that attitude has been a major contributor to my success as a teacher."

– Gwen Shipley

inspiration

Too often, young people lose their love of discovery and curiosity about the natural world during middle and high school. "As a biology teacher, I believe my role is to help foster a love of and respect for the natural world while encouraging my students to pursue careers in science."

› *(left and above)* Students and Shipley examine the affect of caffeine on daphnias' heart rates

As a volunteer in the *Human Body Connection* and the Eye Opener program, and later as an Education Fellow, Shipley worked with the myriad school groups and families who visited the Museum each day. From running *Live Animal* and *Lightning!* shows to talking about "Fur, Feathers, and Scales" and "Slime, Goop, and Glop," Shipley spent hundreds of hours experimenting with and teaching different science "tricks." She estimates that in her two years at the Museum, she presented to nearly 50,000 people—an experience she calls "invaluable." "I learned to engage my audience, to manage questions, and to get people excited about what they are doing. What great training for teaching!" she says.

From these relatively modest beginnings, Shipley not only went on to become one of the most-loved teachers at Chapel Hill-Chauncy Hall but she also won the coveted Outstanding Biology Teacher Award (OBTA) for Massachusetts in 2010. Bestowed by the National Association of Biology Teachers, the OBTA recognizes teachers from all 50 states for their skill, experience, ingenuity, and initiative. In addition to her dozen-year teaching career, Shipley has published an article in *American Biology Teacher* on creating clay models of human torsos as an alternative to dissection and presented widely at conferences on using alternative teaching methods in science classrooms.

Shipley says she learned many of the hands-on, nontraditional techniques she uses now during her years at the Museum. "At the Museum, the idea was always 'show, don't tell.' To me, that attitude has been a major contributor to my success as a teacher. I learned to say, 'Let's give it a try and see what happens,'" she says. "To this day, I still pull some of the fun 'tricks' I learned at the Museum out of my hat. And my students at Chapel Hill love it!"

While proud of her accomplishments and honored to have earned the OBTA, this adored biology teacher says the time she spends with her students—"reawakening their childlike love of nature and encouraging them to be ambassadors of the natural world"—is most rewarding. "I often pause during class to delight in the wonder of life," she says. ■

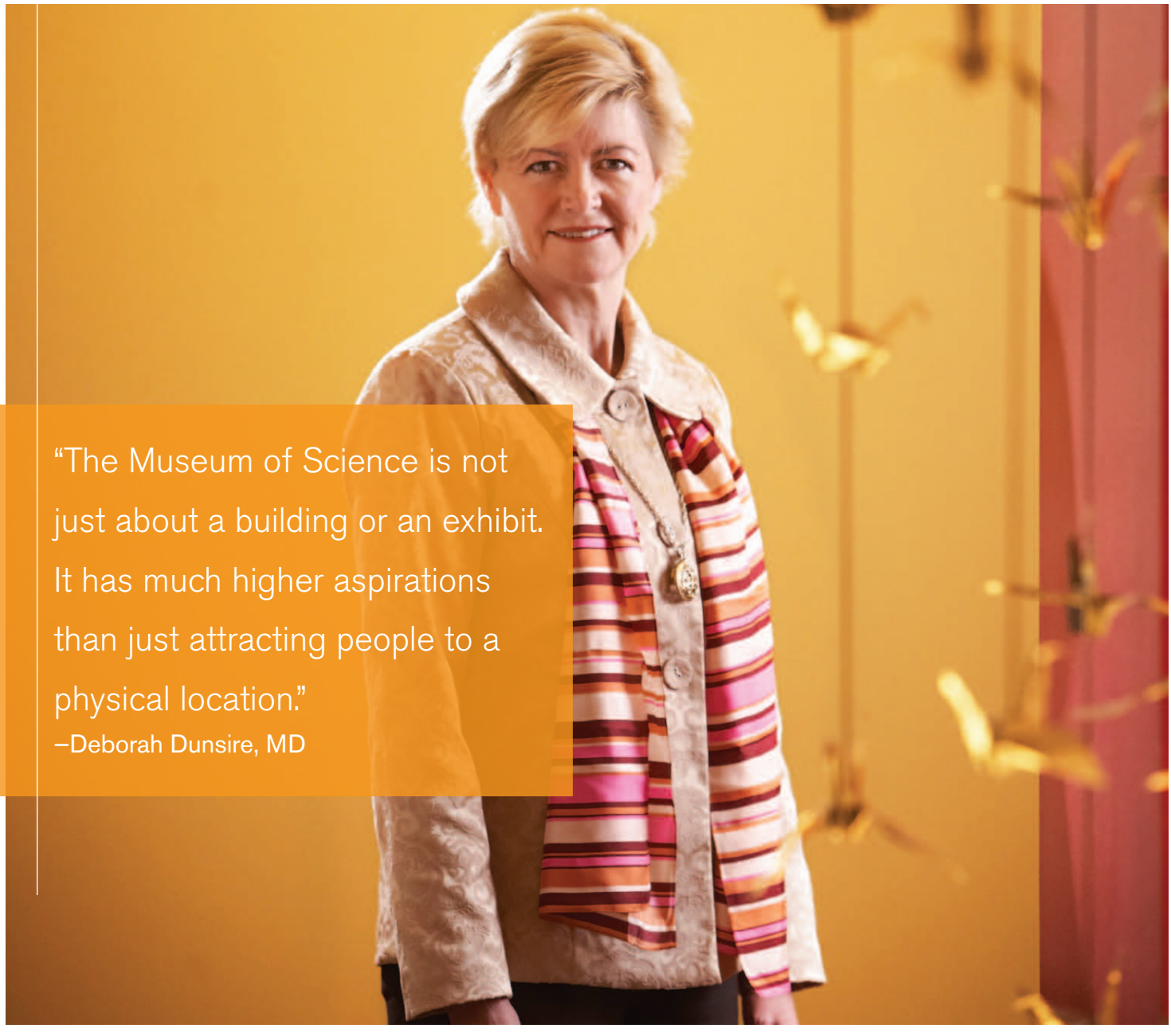
The Museum-Millennium Partnership: Not Just Wishful Thinking

One thousand origami cranes, each covered in silver leaf and containing wishes handwritten by Millennium employees, cancer patients, caregivers, and health care providers, adorn the lobby of Millennium: The Takeda Oncology Company in Cambridge, Massachusetts. Based on a tradition called senbazuru, the display references an ancient Japanese legend whereby a person who folds 1,000 cranes will be granted a wish, such as long life or recovery from illness. For every wish made on its 1,000 Cranes of Hope website (1000cranesofhope.com), Millennium makes a cash donation of an undisclosed amount to cancer-related causes.

Millennium, a pharmaceutical company dedicated exclusively to improving cancer treatment for patients around the world, aspires to cure cancer. Its commitment to this extraordinary mission is evident through its extensive corporate giving program, which provides support for healthcare and other initiatives that improve patient care and advance cancer research and education. In the past year, the company has contributed more than $500,000 to the Museum of Science; the first gift of $280,000 in the spring of 2010 was recently followed by a second donation of $250,000. A large portion of these generous contributions are earmarked for the *Hall of Human Life (HHL)*. The causes and treatment of cancer will be featured prominently in this new life sciences exhibit.

According to Deborah Dunsire, MD, Millennium's president and CEO and a Museum of Science trustee, "*HHL* will educate the community about a subject we at Millennium feel deeply engaged in and passionate about. Boston is a hub of innovation in the field of biotechnology—and *HHL* offers an exciting opportunity to showcase that."

Dunsire, whose goal is to "see in our lifetimes the scourge of cancer visibly recede," takes pride in the responsibility she and her company have "as leaders in the life sciences industry. Millennium is part of the fabric of the community here in Boston, and in the United States," she says. "The mission of the Museum of Science—which includes educating the public about biotechnology—parallels our own: to create a nation and a world that is knowledgeable about science and technology."



Dunsire advocates strongly not only for *HHL*, but also for the Museum's Women in Science programs and the National Center for Technological Literacy® (NCTL®). "I believe passionately that in order to be leaders in scientific and technological fields, Americans need to do a great deal more to advance K – 12 STEM (science, technology, engineering, and math) education. We are falling behind. To see an organization like the Museum of Science engage with the public around this goal is very important to me," she says.

As a member of the Museum's board of trustees, Dunsire greatly admires the visionary leadership of Museum president and director Ioannis Miaoulis. "I have been to many museums around the globe; ours is truly a world-leading institution. As I've gotten to know the Museum, I have come to understand that it is not just about a building or an exhibit. The Museum has much higher aspirations than just attracting people to a physical location," she says.

In fact, Dunsire believes the Museum's "always-fresh" approach to science and technology plays a critical role in readying young people to take on technological careers. "Engaging and growing qualified scientific talent is very important to us at Millennium because it provides a future pool of talent we can access in our battle against cancer," she says. "In partnering with the Museum of Science, we hope to facilitate the growth and sharing of that talent."

The affiliation between Millennium and the Museum can bring both parties to new heights—by priming the next generation of scientific leaders and fueling the pipeline with those who may, one day, cure cancer. Like the 1,000 cranes that soar through Millennium's entryway, this partnership may indeed make wishes come true. ■

Reimaging the Stars: The New Charles Hayden Planetarium Shines

New York City Mayor Michael Bloomberg

After a year-long renovation, the Charles Hayden Planetarium at the Museum of Science re-opened with a ribbon-cutting ceremony on February 10. Attended by dignitaries including Boston Mayor Thomas Menino, Massachusetts Senator Scott Brown, New York City Mayor Michael Bloomberg, and many generous donors, the event celebrated the Planetarium's 53-year history, showcasing its new state-of-the-art digital theater and Zeiss Starmaster projector.

At the event, Mayor Bloomberg, a Boston native, shared his childhood memories of the Museum of Science and captured the significant impact it has had on the lives of millions. His speech is excerpted here.

I don't get to Boston all that much, although my mother still lives in Medford. Two years ago, we celebrated her 100th birthday here in the Museum. Today when I visited her, we reminisced about coming to the Museum when I was young.

I came here every Saturday morning for a two-hour class, and it opened my eyes, not just to science, but to the whole world. The Museum is where I learned to work hard, to be honest and ask questions, to not accept things without thinking whether they made sense. And where I learned not to be afraid to ask questions.

Giant Sequoia Tree, Blue Wing Level 1

I remember that the Museum class had a test at the end of the year. There was a question about how old the slice of a giant Redwood tree was. Everybody was trying to guess its age. I had no idea how old it was, but I also didn't remember it being a Redwood. I remembered it being a Sequoia, which in fact was the answer to the question. What I learned from this Museum changed my world. I learned to question, to think.

The first-hand impact that an institution like this can have on one person is something I understand. For all the money we spend on education and all we talk about policies, education is one teacher dialoguing with one student. To me that teacher was the Museum of Science.

This Museum is a good example of what private philanthropy can do. If it weren't for generous people like you (donors), we would not have this Museum. And if we didn't have this, we wouldn't be giving our kids the opportunity to share in the great American Dream and to be the ones who will win the Nobel Prizes down the road.

I want to thank the Charles Hayden Foundation and the many others who have made the new planetarium a reality. I remember when the planetarium was built. It was the first planetarium I'd ever been in and I would go all the time. This is my hometown museum. It defined my youth and it gave me things that I never would have gotten any other way. ■

(clockwise from top left)

- Priscilla, Lily, and Grace Anderson
- Boston Mayor Thomas Menino, Charles Hayden Foundation chairman, Dean Steeger, Ioannis Miaoulis, and New York City Mayor Michael Bloomberg
- Howard Messing, chair, board of trustees
- Major supporters to the planetarium renovations, Dean Steeger, Judy and Bill Steul, Brit d'Arbeloff, and Senator Scott Brown
- Major supporters to the planetarium renovations, John Fish, president and CEO, Suffolk Construction and Anita Walker, executive director of the Massachusetts Cultural Council
- New York City Mayor Michael Bloomberg with Nonnie and Rick Burnes, major supporters to the planetarium renovations

Science Behind the Stars Signature Gala

Ioannis Miaoulis presents Stars of STEM award to Bill Swanson, chairman and CEO of Raytheon Company

Counting the stars in the Museum's firmament of trustees, overseers, partners, and friends was no easy task at *The Science Behind the Stars* annual gala. All the stars were out on April 14.

Emceed by Bianca de la Garza, moonlighting from WCVB Channel 5's *EyeOpener* newscast, the evening began with Joshua Boger, vice chair of the board of trustees, presenting a plaque to John Fish and Suffolk Construction to recognize their recent work transforming the Charles Hayden Planetarium (see page 18).

The Museum presented the first Stars of STEM award to Henri Termeer, former chairman, president and CEO of Genzyme and a Museum trustee. He marveled at the growing success of the Museum's education programs and promised that the "best is yet to come. We have so much to look forward to, and so much to deliver."

Bill Swanson, Raytheon Chairman and CEO, accepted his Stars of STEM award, reflecting on his 39 years with the technology and innovation leader, "beginning on the factory floor and rising to the corner office." He was delighted to note that Raytheon is the Museum's longest-standing corporate member company—since 1953. He made a surprise announcement of a new $1 million campaign commitment from Raytheon.

The Stars of STEM Award was designed and produced by Peter Houk of the MIT Glass Lab and depicts a cell viewed through a microscope and the cosmos as seen through a telescope.

NASA astronaut Stephanie Wilson, Massachusetts-born and educated at Harvard and Tufts, spoke of the importance of her childhood family visits to the Museum. With her proud parents in attendance, Astronaut Wilson described not only her experiences on the Space Shuttle Discovery—three missions totaling more than 42 days—she described the greatest challenge she faced in becoming an astronaut: learning how to swim at the age of 30.

Auctioneer John Terrio bid up the energy level in Nichols Gallery, raising over $53,000 on five auction items: Raytheon's *Sum of All Thrills Experience* at Disney World; courtside seats at a Boston Celtics' first round playoff game, compliments of Judy and Stephen Pagliuca; a stellar four-course meal with wines from Center of Effort for a party of eight, compliments of Ioannis & Beth Miaoulis and Bill & Cheryl Swanson; a commissioned oil painting, compliments of artist and Museum trustee Stephen Coit; and a *Fighter Pilot for a Day* immersion experience, compliments of Air Combat USA.

Before the night was through, the event raised more than $410,000 to support Museum programs and initiatives. ■

(clockwise from top left)

- Kurt and Therese Melden, Stuart and Elizabeth Moore
- Howard Messing, chairman, Museum board of trustees with NASA astronaut Stephanie Wilson
- Caption to come for room image
- Ioannis Miaoulis with John Fish, president and CEO, Suffolk Construction
- Jonathan Zinno, Bianca de la Garza (emcee), Clair and Mike Wankum, and event sponsors Gail and Bill Fine of WCVB TV
- Caption to come for new image image
- Henri Termeer, former chairman, president and CEO of Genzyme, accepts Stars of STEM award from Ioannis Miaoulis

This spring, the Museum's Art/Science Gallery featured *Voices Without Faces, Voices Without Races*, a six-channel audio and video installation about race designed by acclaimed sound artist Halsey Burgund.

Exploring Race...without Faces

› (*above)* Museum of Science visitors experience *Voices*

› (*right)* Still images from *Voices without Faces, Voices without Races* captured on Rt. 28

A medley of spoken voices, music, and images highlighting diversity in the Greater Boston area, the exhibit focused on the people who live and work along Route 28, which stretches from the northern countryside of Massachusetts, through suburbs and manufacturing towns, past the Museum of Science, through Boston, and down to Cape Cod.

According to Lisa Monrose, project manager of *Voices*, "By chronicling the stories of people along the Route 28 corridor, we hoped to capture the individual experience, past and present, of race in Boston." With help from the Museum, Burgund collected people's voices via more than 250 interviews and used a custom-designed algorithmic computer program to create a blend of voices and original music, along with video of the route that illustrates the physical diversity of the landscape. Like the public conversation about race itself, Burgund's soundscape is generated in real time and is continuously evolving.

Burgund hopes Voices offered Museum visitors the opportunity to talk and think about race in new ways. The exhibit, which complemented *RACE: Are We So Different?* (on exhibit through May 15), was "intentionally ambiguous. There are no faces to 'go with' the voices so it encourages you to put aside any preconceived ideas," he says. "The conversation about race is always changing. I hope those who experienced the exhibit suspended their judgments about race and just listened."

Funding for Voices without Faces, Voices without Races was provided by the National Endowment for the Humanities Fund.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In Brief

› Executive Director of the Boston Harbor Association, Vivien Li, presents at the March 4 forum

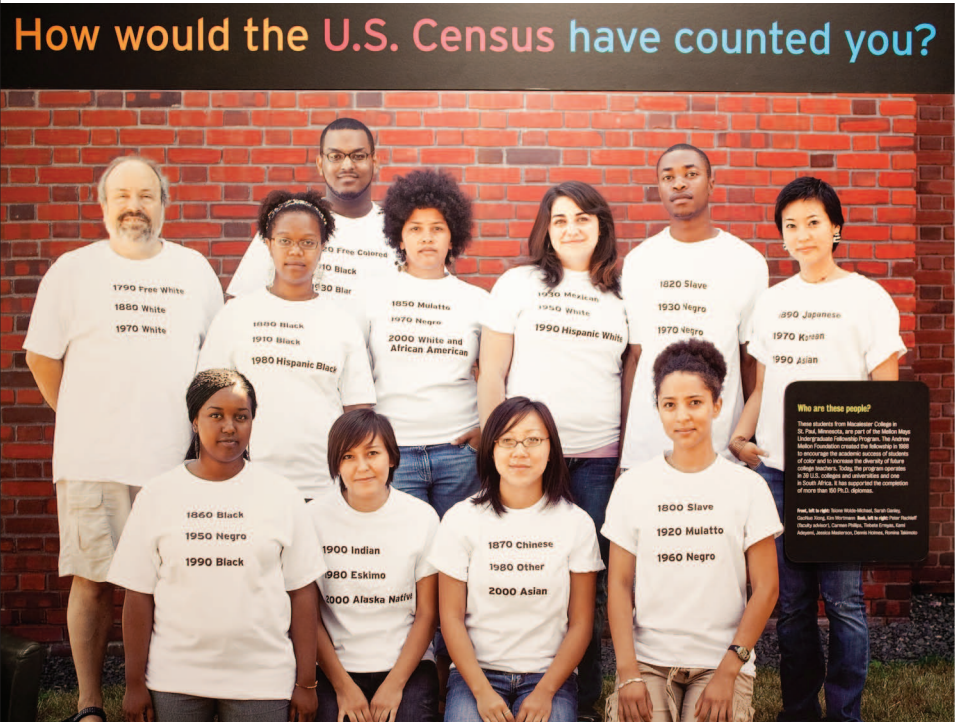
RACE: ARE WE SO DIFFERENT? SPARKS DEBATE AND COMMENTARY

The "scientific" history of race includes many attempts to catalogue different races by a range of biological and genetic differences. Yet, as Museum visitors learned in a special exhibit, *RACE: Are We So Different?*, race does not conform to any scientific criteria, but rather is a social construct. The exhibit, which opened during the Martin Luther King Jr. weekend and was on view through May 15, presented biological, cultural, and historical perspectives on race.

In conjunction with the opening, the Museum hosted a series of events, many developed through collaborations with organizations interested in exploring the rich topic of race relations in Boston. For example, visitors contributed personal stories about how race has affected their lives through *StoryCorp*, an independent nonprofit service that provides Americans an opportunity to record, preserve, and share the stories of their lives. Excerpts were broadcast on WBUR and posted on the Web (wbur.org). In the Art and Science Gallery, the Museum also presented an audio installation, *Voices Without Faces, Voices Without Races: An Audio Journey*, by sound artist Halsey Burgund (see p. 22).

The *RACE* exhibit sparked other collaborations—with The Boston Foundation, Commonwealth Compact, and the Urban League of Eastern Massachusetts—leading to a series of forums called *Boston Talks Race.* The first, held January 26 at The Boston Foundation, featured an intriguing panel discussion about public perceptions of Boston as an unwelcoming city to people of color. (Survey data indicates that African Americans nationally rate Boston at the bottom of a group of ten cities). At a March 4 forum at the Museum, nearly 300 attendees shared their personal reflections about the tenor of life in Boston and challenged each other to continue the conversation.

***RACE: Are We So Different?* is a national traveling exhibit developed by the American Anthropological Association in collaboration with the Science Museum of Minnesota. The exhibit helps individuals better understand the origins and manifestations of race and racism in everyday life by investigating human variation through the framework of science.**



› Participants and visitors at the March 4, 2011 "Boston Talks Race" forum and exhibit viewing

MUSEUM OF SCIENCE TEEN LEADERSHIP COUNCIL

Members of the Museum of Science Teen Leadership Council

The Museum recently formed a Teen Science Leadership Council as a hands-on, holistic opportunity for 12 diverse high school students to develop and hone 21st-century learning and work-related skills like critical thinking, problem solving, time management, and teamwork. Participants were recruited through partnerships with several Boston public schools, the Museum's high school summer internship program, and a regional network of youth partner organizations.

Working with a museum fellow, the Council planned four annual events through weekly meetings from October through June. As young leaders in training, they receive stipends through a grant from BYN Mellon and learn about the Museum's mission and programs, serving as ambassadors and guides for community groups, including peers from their respective schools and neighborhoods.

In February, more than 50 local teens—along with peers from programs at New England Aquarium, Museum of Fine Arts, Institute of Contemporary Art, Teen Empowerment, and others—took part in *Teen Talk*, the Council's first event. The teens explored the Museum's *Race: Are We So Different?* exhibit, which examined race from biological, cultural, and historical perspectives. They also participated in *Teen Talk*, a facilitated discussion about the exhibit, and later completed an questionnaire developed together with the Museum's Research and Evaluation department. Results were overwhelmingly positive. One participant wrote, "I didn't really think about the topic too much before coming here, but now I realize it is totally relevant."

BNY Mellon Supports Museum of Science Teen Leadership Council

A Museum of Science corporate member since 1983, BNY Mellon is dedicated to developing teen leadership and enriching out-of-school opportunities for young adults. As an example, BNY Mellon supports the Museum of Science Teen Leadership Council through the generosity of the Alice P. Chase Trust. In addition, the BNY Mellon CityACCESS program, funded through the Arthur F. Blanchard Trust, sponsors 36 youth from six community-based organizations, known as Teen Ambassadors, empowering them to discover their potential through unique work apprenticeships. Through its corporate membership, BNY Mellon also provides access to the Museum for underrepresented groups by donating 125 of its Museum passes to our Community Access Program.

MUSEUM OF SCIENCE VISION: JANUARY 2011

The Museum of Science believes that everyone has a role to play in the world of science and technology—as learners, as future scientists or engineers, as citizens of our nation, as community leaders and members of the workforce, as consumers, and as stewards of our planet.

The Museum of Science is committed to deepening the public's relationship with science and technology by leading efforts throughout the United States and abroad, in both formal and informal educational arenas, to redefine the roles that science centers can play.

Within our own building, we will continuously transform our exhibits and programs to tell a story of the natural world and the designed world that focuses on the important connections, sustainability and interdependencies of these worlds.

Throughout New England, we will form partnerships with all sectors to enrich our offerings, to represent the cutting edge of science and technology, and to take our invitation into science and technology out to schools and neighborhoods in order to build and strengthen our community.

Throughout the nation, and the world, we will take a leadership role in integrating engineering into school curricula, in forming networks with other Museums to engage visitors everywhere in exploring the impact of science and technology on their lives, and in developing an expanded role for science centers as conveners of forums on critical societal issues.

Through these efforts, the Museum of Science will foster communities near and far in which all citizens have access to the worlds of science and technology and the knowledge and skills to make informed decisions about the issues and developments shaping their lives and our planet's future.

For Second Year Running, Marathoners Support Traveling Programs

Fifteen runners raised over $95,000 for the Museum's Traveling Programs when they crossed the finish line of the Boston Marathon on April 18. These funds will purchase a new van and mobile Starlabs for Traveling Programs, which deliver science and engineering programs to students in schools, community centers, and libraries that lack the resources to visit the Museum.

For more information, please visit mos.org/marathon. If you're interested in running the 2012 Boston Marathon for the Museum, contact Joe Piedrafite at marathon@mos.org or 617-589-0379.

Members of the Museum of Science marathon team: *Back Row (L-R)* Joe Piedrafite, team manager, Jeremy Greenberg, Chinh Pham, Lindsey Acampa, Gary Zaino and Tom Considine *Front Row (L-R)* Julee Jaruszawicus, Jen Evans, Chris Bellon, Ashley Lorentzen, Lea Morgan and Steven Schmitt Missing: Dan Cullinan, Diana Gilson, Ranch Kimball and Jamie Snider

MUSEUM OF SCIENCE SPRING 2011

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Ioannis N. Miaoulis
President and Director

Joan Stephens Hadly
Senior Vice President, Advancement

E. James Kraus Jr.
Executive Director of Development
Campaign Director

Cynthia G. Mackey
Vice President, Marketing and External Affairs

Carl Zukroff
Director, Marketing Communications

Managing Editor:
Holli Adams

Scientific Contributor:
Larry Bell

Contributors:
Leslie Goldberg
Sandra E. Mirabile
Anne Cademenos
Amy O'Doherty
William Walsh

Strategy & Design:
Plural

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Universal-Millennium

The Museum is a place where everyone can participate equally in the excitement of science and technology. To receive more information about accessibility in the Museum or to express a concern about accessibility: 617-723-2500, 617-589-0417 (TTY), communityrelations@mos.org, mos.org/accessibility.

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Our Next Course Is Up to You!

Each year, the Museum of Science educates more than 235,000 children on-site, delivers science and technology programs to 85,000 students through our Travel Programs, and enhances the teaching abilities of countless educators both at the Museum and in the classroom. The vitality for these endeavors comes through philanthropy. A few words from you today can determine the course of our work tomorrow. Those words are:

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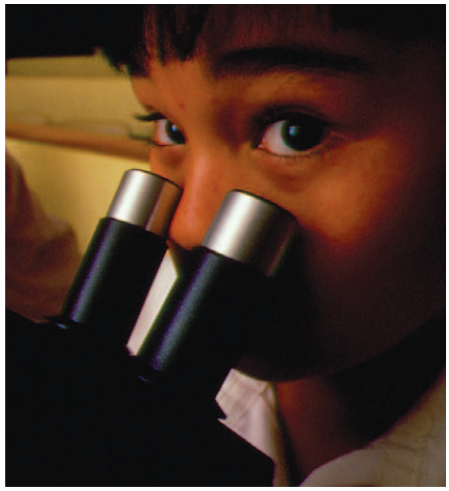

To learn more about how you can support the Museum of Science through a bequest or planned gift, please contact Jim Kraus at 617-589-0181 or jkraus@mos.org.

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