

the Henry Ford

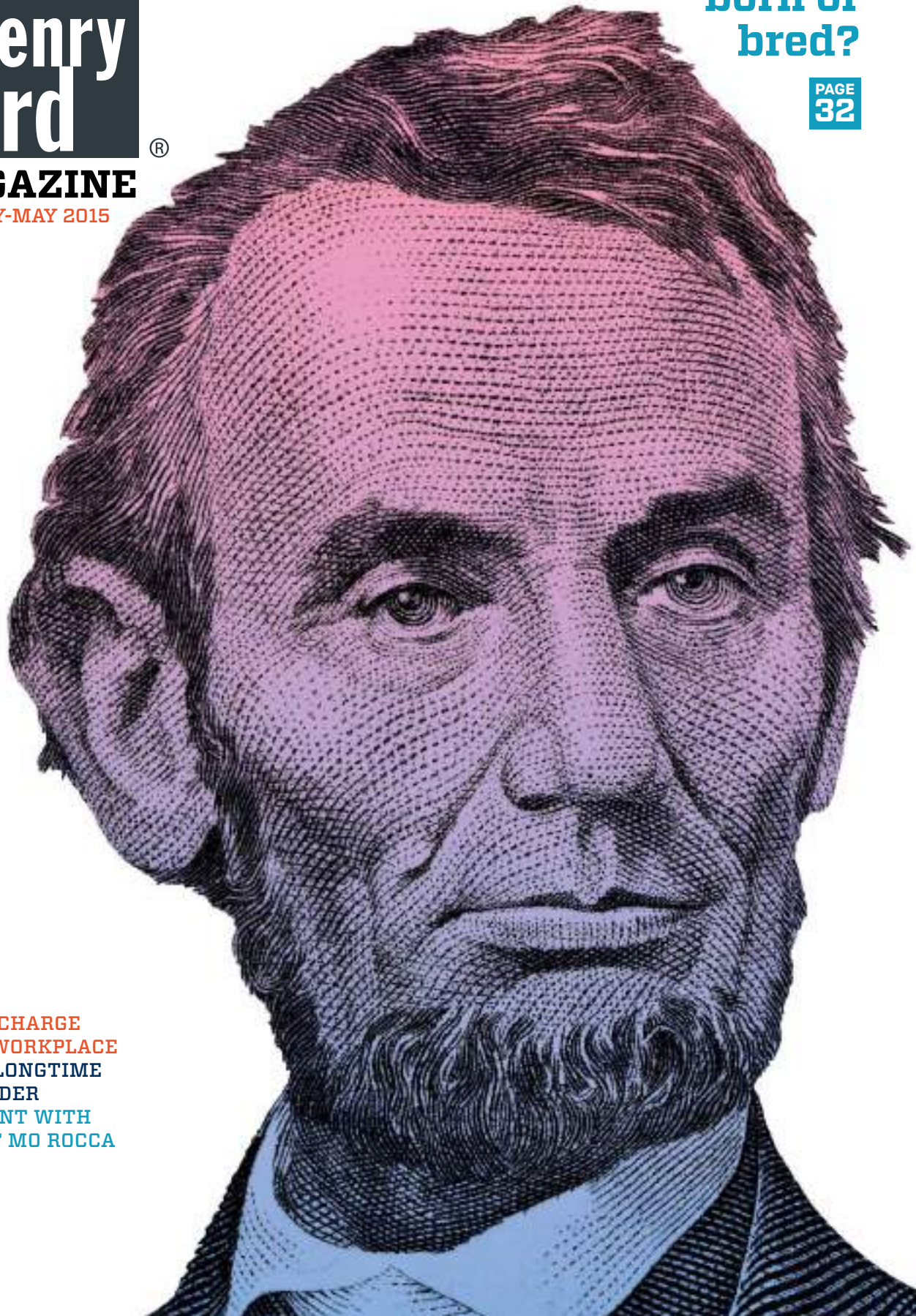
MAGAZINE

JANUARY-MAY 2015

Gain perspective.
Get inspired.
Make history.

Are great
leaders
**born or
bred?**

PAGE
32



**TAKING CHARGE
IN THE WORKPLACE**
NASA'S LONGTIME
LAB LEADER
A MOMENT WITH
TV HOST MO ROCCA

A young girl with dark hair in pigtails, wearing a pink shirt and a white apron, is painting on a canvas mounted on an easel. She is holding a paintbrush and looking intently at her work. The background shows shelves with various art supplies in a brightly lit room.

Every kid deserves
a brush with inspiration.

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Target is on track to give
\$1 BILLION FOR EDUCATION
by the end of 2015.

Learn about the difference
this support is making for
kids nationwide.

Target.com/Education



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It feels good to give back.

And together with our generous customers and employees, Macy's averages more than \$1 million a week to initiatives important to you and your community – arts, education, the environment, HIV/AIDS, and women's health and wellness.

It adds up to \$70 million* a year. It's a good feeling we can all share, and to us, that's the magic of giving.



** Includes grants from Macy's Foundation*

Contents

DEPARTMENTS

Our Mission	4
Behind the Scenes	5
Letter from the President	6
Ask + Answer	7
A Word or Two	8
Social Snippet	9
Off the Shelf	46
On the Shelf	48

INNOVATION NATION

Q&A with Mo Rocca	12
Medical MacGyver	14
Hollow Flashlight Girl	16
More on Innovation Nation	18
More Connected to Innovation Nation	20

INSIDE THE HENRY FORD

Henry Ford Museum	54
Greenfield Village	56
Ford Rouge Factory Tour	58
IMAX® Theatre	60
Take It Forward	62
Acquisitions + Collections	64
2015 Events	66

71 STAY, EXPLORE + SAVOR

88 A LOOK BACK

FEATURES

24 FERTILE GROUND FOR CREATIVITY

Companies are dumping org charts and titles for improv and employee empowerment.

32 LEADERS: BORN OR MADE?

Is President Lincoln's legacy the definitive clue to whether great leadership skills are innate or learned?

38 OnINNOVATION: STORIES FROM TODAY'S VISIONARIES

Charles Elachi, stargazer, scientist and director of NASA's Jet Propulsion Laboratory has discovered that you have to let go to be a good leader.



NASA/JPL-CALTECH

24

► As part of its Holacratic management style, New York consulting firm Undercurrent is forgoing traditional assigned employee seating, opting instead for common spaces where people — regardless of job description or title — are free to cop a spot and work independently or collaboratively with the random set of colleagues also in the room.



WANT MORE?
THIS ISSUE OF
*THE HENRY FORD
MAGAZINE* IS
AVAILABLE IN
JANUARY 2015
ON ITUNES AND
GOOGLE PLAY FOR
IPAD AND ANDROID
TABLETS. ►

ON THE COVER

Assassinated 150 years ago, President Lincoln still remains one of the most studied, analyzed and emulated leaders.

©ISTOCK.COM/KARSOL



Our **Mission**

Who We Are and What We Do

Gain perspective. Get inspired. **Make history.**

THE HENRY FORD: A NATIONAL TREASURE AND CULTURAL RESOURCE

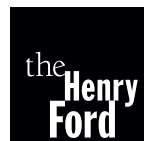
The Henry Ford provides unique educational experiences based on authentic objects, stories and lives from America's traditions of ingenuity, resourcefulness and innovation. Our purpose is to inspire people to learn from these traditions to shape a better future.

Located in Dearborn, Michigan, The Henry Ford is the cultural destination where people connect with America's history. A national historic landmark with five unique venues, unparalleled collections and world-class expertise, The Henry Ford is an internationally recognized destination and force for fueling the spirit of American innovation and inspiring a can-do culture.

At The Henry Ford, stories and artifacts from 300 years of America's history bring to life the accomplishments of ordinary and extraordinary individuals alike. Nearly 2 million visitors annually experience Henry Ford Museum, Greenfield Village, Ford Rouge Factory Tour, Benson Ford Research Center and The Henry Ford IMAX® Theatre. A continually expanding array of content available online provides anytime, anywhere access to countless other individuals worldwide.

The Henry Ford is also home to Henry Ford Academy, a public charter high school that educates 485 students a year on the institution's campus and was founded in partnership with The Henry Ford, Ford Motor Company and Wayne County Public Schools.

For more information, please visit our website, thehenryford.org.



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WHAT IS THE BIGGEST RISK YOU HAVE TAKEN?

Our contributors tell us.



MELISSA MCFEETERS is an illustrator and designer in Philadelphia. Her work has appeared in *Wired UK*, *HOW Magazine*, *Philadelphia Magazine*, as well as the *2014 Communication Arts Illustration Annual*.

Fertile Ground for Creativity, Page 24

Biggest risk: Quitting my full-time job during a rocky economy to pursue freelance illustration and design work.



CHRISTIAN NORTHEAST is an illustrator living in a small town an hour east of Toronto, Ontario. Christian's clients have included many major magazines, book publishers and ad agencies. He has created animation for TV spots, a book for Drawn and Quarterly and some funny kids blocks for Fred and Friends, to name a few. You can get a taste of what he does at christiannortheast.com.

Leaders: Born or Made?, Page 32

Biggest risk: I'd like to say it was surfing shark-infested waters or free-climbing in Yosemite, but I'm pretty risk averse. I once rode a bike without tucking my pant leg in my sock, but that was when I was young and crazy.



MARVIN SHAOUNI captures life and all that goes with it. Based in Detroit, he shoots for editorial and advertising clients all over, with a focus on people, food and daily life. Collaboration, he says, is the way he likes to work with clients, stemming from a curiosity of people and their interests. He is comfortable with everyone, from celebrities, CEOs and artists to everyday people.

Fertile Ground for Creativity, Page 24

Biggest risk: Starting my photography business has to be up there when ranking some of the bigger — and most rewarding — risks I've taken. The biggest risk, though, is not taking one.



TODD WASSERMAN is business and marketing editor for Mashable, a leading content generator on digital innovation. He's been writing professionally for more than 20 years, enjoys racquetball and partaking in a mean game of Scrabble.

Fertile Ground for Creativity, Page 24

Biggest risk: In 1999, my wife and I quit our jobs, put our stuff in storage and moved to Costa Rica. Our plan was to learn Spanish and get a job at a wire service somewhere in Latin America. I remember lying in bed that first night and wondering, "What did I do?" After six months, we weren't close to fluent, plus I was homesick. I never regretted taking the time off. Maybe we'll try it again in our 60s when the kids are grown.



MICHAEL LYNCH has spent a number of years working in the museum field, including a stint as an assistant curator at the Abraham Lincoln Library and Museum in East Tennessee. He is currently a doctoral student in history at the University of Tennessee, specializing in the American Revolution, and a longtime dinosaur enthusiast.

Leaders: Born or Made?, Page 32

Biggest risk: My decision to put my museum career on hold to teach college classes and head back to graduate school. Lucky for me, it has worked out well so far; UT was kind enough to award me a generous fellowship, so I'm spending most of my days — and nights — hitting the books.

Letter from the **President**

Casual Thoughts and Serious Correspondence



MICHELLE ANDONIAN



MICHELLE ANDONIAN



KRISTINA SIKORA / KMS PHOTOGRAPHY

Clockwise from top: On April 15, 2015, museum visitors will have a rare opportunity to see the chair Abraham Lincoln was sitting in when he was shot removed from its glass enclosure. *Innovation Nation* show host Mo Rocca (left) and The Henry Ford's President Patricia E. Mooradian discuss Rosa Parks' role in the civil rights movement. Periodically, the Henry Ford Museum floor is transformed into a pseudo TV studio for filming segments of *Innovation Nation*.

In April, The Henry Ford will observe the 150th anniversary of Abraham Lincoln's assassination.

Lincoln is widely regarded as our greatest president, but what made him so great? In large part, it was his unique leadership qualities. And on page 32 of this issue of *The Henry Ford Magazine*, writer Michael Lynch poses a fascinating question: Are great leaders like Lincoln born, or do they learn or acquire such skills during their life's journey?

It's a compelling topic that resonates at The Henry Ford because our heroes of innovation — Henry Ford, Thomas Edison, George Washington Carver and so many others — were also leaders. Their remarkable stories provide inspiration not only for visitors to The Henry Ford but also for all of us who work here.

Now, we are using these stories to create educational resources as well. Innovation 101 is our interactive five-day education module that uses oral histories of various innovators, past and present. Our goal is to empower 5,000 teachers to inspire 125,000 students to apply the core principles of innovation to their own lives.

The foundation of this ambitious curriculum is in the areas of Science, Technology, Engineering and Math (STEM), an approach that will nurture a new generation of thinkers and doers to create the best possible future for us all.

Last fall, our *Innovation Nation* TV series premiered on the CBS Network. Hosted by the irrepressible Mo Rocca (see page 12), the show is a celebration of innovation, engaging more than 40 million viewers every Saturday morning with our stories of the past, as well as those happening today, all over America.

Which brings me back to Mr. Lincoln.

While we'll never truly know whether our 16th president was born a great leader or ultimately grew into one, what matters most is that his achievements are an endless source of inspiration.

So, too, are the stories we tell at The Henry Ford. And with educational tools like Innovation 101 and *Innovation Nation* on TV, a future that truly seems limitless beckons as an entire generation of young minds is primed to become the leaders and innovators of tomorrow.

We are honored, privileged and, yes, forever inspired to take an active part in that process.

Patricia

PATRICIA E. MOORADIAN, PRESIDENT



BILL BOWEN

ASK: Why take risks?

ANSWER: “Are you crazy?” I often heard those words when I first told people about Henry Ford Academy (HFA). A charter high school located on the grounds of The Henry Ford, HFA is the first of its kind: developed in partnership with a nonprofit cultural institution, The Henry Ford, and a global business, Ford Motor Company, and chartered by the local intermediate school district, Wayne RESA.

Soon after the doors opened in 1997, people were still asking the same question: “Are you crazy?” Why would The Henry Ford, a place filled with families on vacation, senior citizens and elementary schoolers, want teens on the premises daily? Why would HFA’s teachers want the added challenge of having to keep students extra quiet and being on display in a world-class museum? Everyone thought it was a risk that the museum should not take. What could possibly be in it for them?

More than a decade and a half later, HFA is proof why taking such a risk is well worth it — even if it takes a little craziness to pull it all off.

HFA uses the classrooms as “learning labs” where teachers utilize the newest teaching techniques and best practices to design a school experience that pushes the envelope of what can be accomplished at a high school. (For example, all students complete a 75-hour internship and do doctoral-style defense.) In addition, students not only learn rigorous academic content, but they engage in periodic design challenges, which ask them to collaborate and develop innovative solutions for today’s big problems.

Embracing risk, eagerly trying new ideas and understanding that failure is an important part of success: We hope every HFA graduate takes these into the real world, along with their diploma. Are we crazy? Maybe a little — but we wouldn’t have it any other way.

TEACHING WITH A TWIST

The classroom is a collaborative learning lab at Henry Ford Academy as teacher Mike Flannery (standing) and students demonstrate.

CORA CHRISTMAS is

principal of the Henry Ford Academy at The Henry Ford.

A Word or Two

Defining People, Places, Pastimes

SPOTTY LINCOLN

Abraham Lincoln, then a U.S. representative from Illinois, was highly skeptical of President James Polk's claim about the spark that ignited the Mexican-American War and started introducing a series of "spot resolutions" in Congress challenging Polk's assertion and asking the president to provide Congress with the exact spot where blood was spilled on American soil. So persistent was Lincoln in pressing his resolutions that newspapers began calling him "Spotty Lincoln."

Here's a list of some other nicknames given to Abe:

- The Great Emancipator
- The Sage of Springfield
- The Sectional President
- Father Abraham
- Honest Abe
- Uncle Abe
- Old Abe
- The Tycoon
- The Ancient One
- Illinois Rail-Splitter
- The Liberator
- The Abolition Emperor
- The Illinois Ape
- The Flatboatman
- The Log Splitter



Starved

[STAHRV-DAH] V.

When you need something so bad, it hurts. On America's western frontier, it might be cornmeal mush and molasses to curb morning hunger pains or courtroom antics with Abe Lincoln to satiate the brain's need for news.

PAGE 56

Sensible

[SEN-SUH-BUHL] ADJ.

Show good sense or sound judgment, and someone might put this word in front of you. Legendary leader Mahatma Gandhi was quick to associate this word with Henry Ford after he sent a certain letter.

PAGE 65

Magic

[MAJIK] N.

Forgo wizards Merlin and Harry Potter. Skip over tricksters Harry Houdini and David Blaine. Think President Abraham Lincoln and his supernatural powers of honesty, humility and resiliency that helped him reinvent our nation.

PAGE 34

Playground

[PLEY-GRAUND] N.

A space for a child's recreation or, for this issue, a serious space where scientists can study how one could travel in space.

PAGE 44



Detective

[DIH-TEK-TIV] ADJ.

Used to describe stuff — tasks, books and such — that uncovers the unknown. Architect-turned-photographer John Margolies did this type of work along America's roadsides and took snapshots of what he found.

PAGE 54

Crazy

[KRA-ZE] ADJ.

Often associated with the deranged and insane, but just as commonly told to individuals with new ideas that could — and have — changed the world.

PAGE 7



ROVER COURTESY OF NASA

#AskACurator Day 2014

For the second year in a row, curators from The Henry Ford participated in the global #AskACurator Day Twitter chat on September 17, 2014, spearheaded by Mar Dixon (@MarDixon). Fielding questions from naming a favorite artifact to providing students advice on how to become curators, The Henry Ford answered it all, including questions about digital image rights, how we acquire new photos and how to take care of your beloved family pics at home.

Q ▶ In the age of infinite digital reproducibility, how much does copyright still matter, or are the floodgates open?

Sonya Coleman,
@sassafrassyme

A ▶ @sassafrassyme
Definitely still matters. We post collections on our website as “fair use” but have a higher bar for other uses.

Ellice Engdahl,
digital collections &
content manager,
The Henry Ford

Q ▶ What license do you share digitized content under, and why?

James Morley,
@jamesinealing

A ▶ @jamesinealing
Most of our images CC BY-NC-ND. Sharing and use with image/object authenticity. More here: www.thehenryford.org/copyright.aspx.

Brian Wilson, digital
processing archivist,
The Henry Ford

Q ▶ How do you go about accessioning and preserving any new photographs?

Alex Sherry,
@alexerry2

A ▶ @alexerry2
First, as curator I write a description of the physical piece/historical context, then present it to our collections committee.

A ▶ @alexerry2
Second, the catalogers use my description as a beginning point for creating its record for online access.

A ▶ @alexerry2
Third, it's placed in an acid-free enclosure and box in climate-controlled, dark storage.

Cynthia Read Miller,
curator of photographs
and prints, The Henry
Ford

Q ▶ What are some of the keys to keeping your prints safe, organized and ready for display?

The Lone Wanderer,
@theglitzkrieg

A ▶ @theglitzkrieg
For personal photos, first store them in a closet that is NOT in an attic or the basement.

A ▶ @theglitzkrieg
Second, choose your favorite ones among a group, and write all identifying info in pencil on the back.

A ▶ @theglitzkrieg
Pencil is preferred because we never want to do anything permanent to an original print that can't be undone.

Cynthia Read Miller,
curator of photographs
and prints, The Henry
Ford

WE'RE HERE

While #AskACurator Day happens just once a year in late summer, you can always ask The Henry Ford a question, day or night, online. We're @TheHenryFord on all social platforms.



▲ Cynthia Read Miller, curator of photographs and prints, The Henry Ford



BILL BOWEN

WANT MORE? STAY CONNECTED WITH THE HENRY FORD. FOLLOW, TWEET, SHARE, WATCH. ▶



visit thehenryford.org

EDISON AND HIS EMPLOYEES INSIDE MENLO PARK LABORATORY, 1880.

the
Henry
Ford

How can you support America's first R&D center?

Help us conserve and provide access to The Henry Ford's Archive of American Innovation — our country's window into traditions of resourcefulness, innovation and ingenuity, including national treasures like Thomas Edison's Menlo Park Laboratory. Learn more @ thehenryford.org/support.

WANT MORE?

The free tablet edition of the latest issue of *The Henry Ford Magazine* is available in January 2015 on iTunes and Google Play for iPad and Android tablets.



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the
Henry
Ford



INNOVATION NATION

+ WITH **MO ROCCA**

 CBS
DreamTeam
...It's Epic!

Take a look inside the *The Henry Ford's Innovation Nation* TV series.

A weekly TV show that airs Saturday mornings on CBS presents inspiring stories that showcase present-day change makers and the possibilities for future progress. Each episode of *The Henry Ford's Innovation Nation* shares dramatic accounts behind the world's greatest inventions — and the perseverance, passion and price required to bring them to life.

Q&A with Mo Rocca **12**

Medical MacGyver **14**

Hollow Flashlight Girl **16**

More on Innovation Nation **18**

More Connected to Innovation Nation **20**

KRISTINA SIKORA / KMS PHOTOGRAPHY

Q&A

with host **Mo Rocca**

The Henry Ford's Innovation Nation TV series premiered last fall — you can catch it on Saturday mornings on CBS Network. The Henry Ford Magazine caught up with the show's witty host, Mo Rocca, to ask him what it's been like to hang out at The Henry Ford and to get to know some next-generation innovators.

THF Magazine ▶ Did you know about The Henry Ford before you became *Innovation Nation's* host?

Rocca ▶ I had heard of the museum but had never been there. I'm a big history buff, especially of presidential history, and was always surprised to find how many items, such as President Kennedy's Lincoln Continental, were part of this museum. I knew it must be an amazing place. When I showed up, it blew my mind apart. It is really like a Smithsonian best-of, and you don't know how off the charts it is until you're here.

THF Magazine ▶ What has it been like to spend time at The Henry Ford filming the show? Any favorite moments?

Rocca ▶ It's been a joy. I'm all about making my living doing things that make me smarter. Spending time in the Menlo Park lab with Marc Greuther [THF's chief curator] talking

about Thomas Edison. Inspiring. Visiting the Wright brothers' cycle shop. A moving experience, especially as you heard the sound of jets flying overhead. Really puts things into perspective in terms of the power of innovation and intuitiveness. These two brothers changed the way the world works.

THF Magazine ▶ How about the present innovators that have been featured on the show so far — any that have piqued your interest?

Rocca ▶ Ilac Angelo Diaz and his Liter of Light. The idea that you can take water, a little bleach and a plastic bottle like the thousands we throw in the garbage every day and create a light source for people without one.

THF Magazine ▶ What can viewers continue to expect in terms of the TV show's content?

Rocca ▶ More stories about dreaming big and not quitting. I'm not sure if the word is in the dictionary, but it's a word I like to use: stick-to-itiveness. It's that virtue, that principle where you know that dreaming big doesn't work unless you're willing not to quit. Success is never failure-free.

RESEARCH Igor Sikorsky, the man who invented the helicopter. Mo Rocca is a big fan of his amazing story. ▶

VISIT The Newcomen steam engine on exhibit in Henry Ford Museum. It's the oldest known surviving steam engine in the world and one of Mo Rocca's favorites on the museum floor. ▶



Menlo Park Lab



DT&M Roundhouse



Adam with the NAO Robot



Henry Ford Museum

You can catch *The Henry Ford's Innovation Nation* with Mo Rocca on Saturday mornings during CBS Network's block of educational programming called CBS Dream Team ... It's Epic.



Alie playing with some fiber optics

THE CORRESPONDENTS



Alie Ward

Alie is passionate about science and art, and she has studied everything from animal biology to film. After appearing in a viral online cooking tutorial with a friend, she found herself featured in a *New York Times* article. That eventually led to a contract with the Food Network, regular appearances on the Cooking Channel and her own show. She likes volunteering at the Natural History Museum in Los Angeles, jumps at any excuse to go on a road trip and boasts a stellar bug collection.



Adam Yamaguchi

A hard-core reporter, Adam has investigated deadly drug wars in Mexico, wildlife trafficking in Asia and has reported on everything from whale hunts to war in Afghanistan and Iraq. He is an award-winning correspondent and producer and a seasoned world traveler who has been to more than 75 countries. A super fan of sushi, he has an affinity for the bluefin tuna and is passionate about protecting the environment and saving the planet.

@MoRocca

"Thanks to all who watched *Innovation Nation* (& thanks Thomas Edison for the electricity that made watching it possible)"

DID YOU KNOW? /

Mo Rocca is the guy you also see on *CBS Sunday Morning* and *My Grandmother's Ravioli* on the Cooking Channel.

PLAYING WITH WORDS Mo Rocca appreciates a little wordplay. "I may not be Pulitzer Prize-winning," he quips, "but I am a journalist and a writer who enjoys playing with words." When you watch *Innovation Nation*, keep a lookout for episode elements such as the "**Mo You Know**" and "**MOcabulary**," where the show has a little fun messing around with words and obscure trivia.

+Medical MacGyver

INVENTOR:
JOSE GOMEZ-MARQUEZ



PROBLEM: 95% of medical equipment used in developing countries is hand-me-downs that often fail within six months.

SOLUTION: Develop an affordable medical erector set so doctors and nurses can build their own medical equipment.

littledevices.org ▶

“Are we going to change as an industry to design better devices for these environments, or are we going to empower people who are already living in these environments — whether it’s in inner city Boston, New York City, rural Texas or rural Nicaragua — to make their own?”

— Jose Gomez-Marquez



▲ The medication adherence kit includes an array of accessories to do tasks such as monitor medication usage and weigh pill bottles. It includes ergonomic tools such as simple zip ties to adjust the grip and hold of medication containers. Color-coded pills can be produced by spraying food grade coatings to differentiate medications.

ANNA YOUNG, LITTLE DEVICES @ MIT

When Massachusetts Institute of Technology’s Jose Gomez-Marquez was on his way to Nicaragua to start distributing MEDIKit medical device construction sets to doctors and nurses, toys were the last thing on his mind.

Until he started looking a little closer. Toys have a lot of hidden mechanisms that can be harvested for other purposes — gears, fiber optics, electric circuit boards. And toys are cheap and can be found almost everywhere, from downtown Boston to downtown Managua in Nicaragua.

Now Gomez-Marquez often looks to toys mostly meant for child entertainment for scientific inspiration and medical discovery. Watch *The Henry Ford’s Innovation Nation* to find out how “playing” with toys is empowering health care providers — often working in remote areas with no electricity or running water — to think innovatively and build life-saving devices from the simple, everyday things around them. ●

WATCH [Medical MacGyver thehenryford.org/innovationnation/episode2.asp](http://thehenryford.org/innovationnation/episode2.asp) ▶



MOcabulary

democratize - *verb*
to make something available to all people. Toys helping to make medical devices available to the world.

OTHER PROJECTS THAT INSPIRE JOSE AND SOME RELATED INVENTIONS:

Research the MakerNurse Project makernurse.org ▶

Think more creatively about technology and disabilities diyability.org ▶

Visit the online community of patients and caregivers smartpatients.com ▶

Discover home sweet med lab cue.me ▶

Google Little Devices Lab's solarclave d-lab.mit.edu/scale-ups/solarclave ▶

Test your hearing in your living room iheardmedical.com ▶

Learn about woodworker Richard Van As and special-effects guy Ivan Owen and their DIY prosthetic robohand.net ▶



LITTON ENTERTAINMENT



COURTESY OF ROBOHAND



IN THE FIELD

A nurse is working at a small health clinic in Jicarito, Nicaragua, that is two mountains and 1.5 hours from the nearest hospital. The remote clinic is also without electricity or running water. She is given a Drug Delivery MEDIKit, and within a few days she is able to invent a foot-powered nebulizer and a pediatric mask fabricated from component parts in her kit and a plastic pop bottle. She can now treat kids in the midst of an asthma attack instead of sending them to an unreachable hospital.



LITTLE DEVICES

ONLINE **LIKE TO MAKE THINGS?**
Subscribe to **THF OnMaking** at thehenryford.org/enews ▶

WATCH View innovator videos on THF OnInnovation oninnovation.com ▶

+Hollow Flashlight **Girl**

INVENTOR:
ANN
MAKOSINSKI



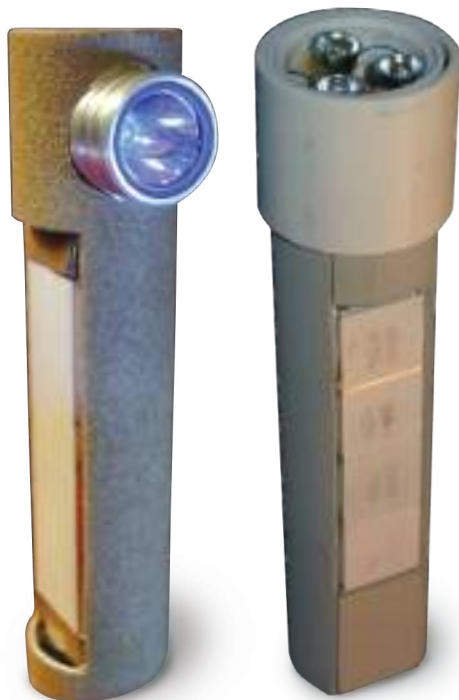
PROBLEM: More than 1.5 billion people live without electricity and electric lighting.

SOLUTION: Use the heat from your hand to power a simple light source.

annventions.com ▶

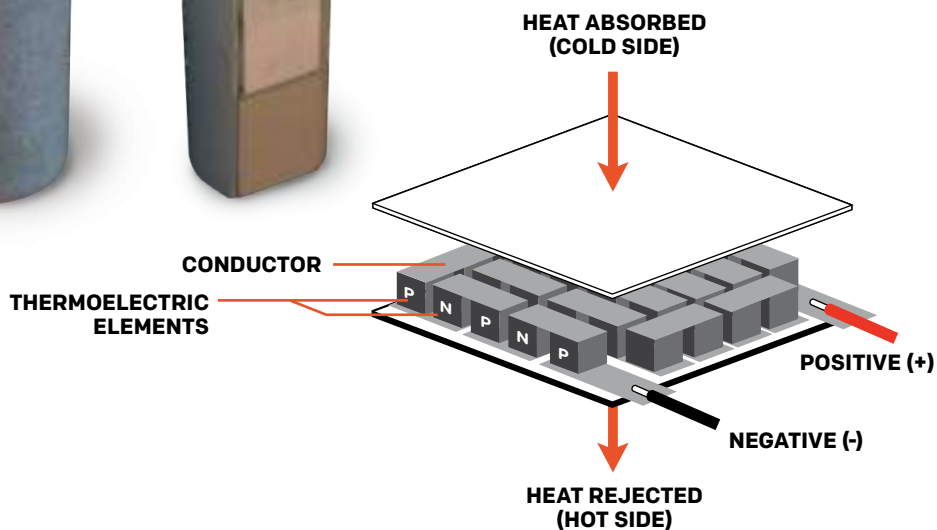
“Part of my intent in creating the flashlight was to simply help a friend in a developing country who couldn’t afford electricity. It’s amazing to think that this might provide a way to produce electricity for other people in the near future.”

— Ann Makosinski



HOW DOES IT WORK?

The second law of thermodynamics states that heat will move to a cooler area. The thermoelectric module absorbs heat on the cold side. The transfer of temperature creates electrical power.



Ann Makosinski says she was a strange kid who liked bugs and playing with LEGOs.

Thought she might grow up to be an archeologist or an actress one day. She says she also always knew she was — and wanted to be — different than everyone else, to stand out. She even created her own word, “differentess,” to describe herself.

Now a high schooler with a knack for science, Makosinski is leveraging her “differentess” in amazing ways. She has created a simple light source — a hollow flashlight — that shines using the energy

created from the heat of your hand. No batteries included or necessary. Watch *The Henry Ford’s Innovation Nation* to find out why an online chat with a gal pal in the Philippines sparked Makosinski to invent this handheld device that could one day light up the world in a whole new way. ●

WATCH [Hollow Flashlight thehenryford.org/innovationnation/episode5.asp](http://thehenryford.org/innovationnation/episode5.asp) ▶



LITTON ENTERTAINMENT

OTHER PROJECTS THAT INSPIRE ANN AND SOME RELATED INVENTIONS:

Google the Google Science Fair googlesciencefair.com ▶

Watch Ann Makosinski www.youtube.com/watch?v=9CCGUMkcbjg&feature=youtu.be ▶

Type “Joule Thief” in a search engine and hit enter

Research Nikola Tesla and Marie Curie, Ann’s inspirations

Investigate *Acorn the Nature Nut*, one of Ann’s favorite shows as a child acornthenaturenut.net ▶

Discover Lonnie Johnson, the inventor of the Super Soaker and a thermoelectric generator

Check out Wristify, another thermoelectric invention embrlabs.com ▶



COURTESY OF WRISTIFY

A DAD REMEMBERS

Art Makosinski, Ann’s father, recalls that even at 5 or 6 years old, Ann would be making things around the house. She was always looking for pliers or scissors. He would even make videos of her describing all of her inventions. “She had this kind of inventive vein in her, a spark in her, ever since I can remember,” he said.

ONLINE **LIKE TO MAKE THINGS?** Subscribe to **THF OnMaking** at thehenryford.org/enews ▶

WATCH View innovator videos on THF OnInnovation oninnovation.com ▶

+More on Innovation Nation



PROBLEM: Potentially life-saving info is often lost inside inaccessible places and spaces.

SOLUTION: Use drone technology to revolutionize the way we see our world.

DRONE INVASION

Drones aren't anything new, especially to the military, but their usage in everyday life is still wide open with possibilities. Some are shaped like airplanes, others take on the likeness of a whizzing hummingbird. All have the capability to perform innumerable domestic duties, from delivering that latest online purchase to your doorstep and filming high-flying antics for the latest superhero blockbuster to analyzing weak spots on a bridge built over angry waters and aiding first responders in search and rescue.

avinc.com ▶
dronedudes.com ▶

WATCH thehenryford.org/innovationnation/episode1.asp ▶

PROBLEM: Lack of accessibility to 3-D printing technology and creation.

SOLUTION: Develop an affordable 3-D printing pen so anyone, anywhere, can build anything their hands can draw.

3DOODLER

One day when toy guys Maxwell Bogue and Peter Dilworth were watching a 3-D printer print, they had an idea. What if we were to downshift just a bit and swap printer for pen? The 3Doodler is a super crayon of sorts, the first writing utensil that lets you freehand draw a real 3-D creation in midair. No specific techy skills, computers, printers, paper or canvas necessary. Just you, your imagination, the pen and the personal space around you.

the3doodler.com ▶

WATCH thehenryford.org/innovationnation/episode4.asp ▶

PROBLEM: Good help is hard to find.

SOLUTION: Build affordable humanoid robots that can assist whenever needed.

HUMANOID ROBOTS

As a child reading sci-fi books, Bruno Maisonnier wondered why all the gadgets on the pages didn't exist in the real world. His childhood wonderment soon grew into a mission with vision, where he sees companion robots walking the streets hand-in-hand with humans — with helpful roles as teachers, caretakers, home care helpers and more. He calls it a new humane species for the benefit of humankind.

aldebaran.com ▶
robotslab.com ▶

WATCH thehenryford.org/innovationnation/episode3.asp ▶



COURTESY OF DRONE DUDES



COURTESY OF AEROVIRONMENT INC. AVINC.COM

PROBLEM: Millions of people live without indoor illumination.

SOLUTION: Create a simple DIY light source that can be replicated anywhere.

LITER OF LIGHT

One plastic bottle, a little bleach and some water. When ordinary people living in dark dwellings put them all together, they can create a rudimentary light source that can brighten up any room. Illac Diaz is the brainpower behind the LITER of Light project, which provides the know-how about how to light things up to those who need it and recycles otherwise useless trash in the process.

aliteroflight.org ▶

WATCH thehenryford.org/innovationnation/episode2.asp ▶



COURTESY OF MYSHELTER FOUNDATION

You can catch *The Henry Ford's Innovation Nation* with Mo Rocca on Saturday mornings during CBS Network's block of educational programming called CBS Dream Team ... It's Epic. Check your local listings.



COURTESY OF 3DOODLER



NAO ROBOT BY VINCENT DESAILLY



From the collections of THF

Snippets of the artifacts and assets featured on *The Henry Ford's Innovation Nation*

EPISODE 2

+The **Railroad Turntable**

Curator of Transportation Matt Anderson joins show host Mo Rocca for an educational walk-around in Greenfield Village's DT&M Roundhouse.

WATCH thehenryford.org/innovationnation/episode2.asp ▶



EPISODE 3

+Rosa Parks **Bus**

A lesson in the civil rights movement, its unlikely hero and the bus where she refused to move. With THF's President Patricia Mooradian and Executive VP Christian Øverland.

WATCH thehenryford.org/innovationnation/episode3.asp ▶



EPISODE 4

+The Wright Brothers **Cycle Shop**

An amazing look at Wilbur and Orville Wright — Mo Rocca calls the duo “the professional pedalers that pioneered planes” — with Curator of Transportation Matt Anderson.

WATCH thehenryford.org/innovationnation/episode4.asp ▶



EPISODE 5

+Henry Ford's **Classic Violins**

Tutorial with Curator of Domestic Life Jeanine Head Miller on how a CAT scan can give us priceless knowledge about priceless 300-year-old violins.

WATCH thehenryford.org/innovationnation/episode5.asp ▶



EPISODE 6

+Dymaxion **House**

A tour with Chief Curator Marc Greuther of Buckminster Fuller's only surviving Dymaxion, a suburban shelter in its most fundamental form.

WATCH thehenryford.org/innovationnation/episode6.asp ▶



KRISTINA SIKORA / KMS PHOTOGRAPHY

“The Henry Ford is geared toward inspiring a better world. The TV show is infused with that same spirit. **A tribute to doers willing to push through.**”

— Mo Rocca

+More Connected to Innovation Nation

The Henry Ford's Innovation Nation may be a strong example of entertaining TV programming, but it's part of something much bigger than just Saturday mornings in front of the telly.

The show is one of a trio of new educational resources from The Henry Ford that are designed to amp up how teachers teach and students learn to think and act like innovators. The Henry Ford's very own national platform, if you will, where "we want to ignite a learning revolution through innovation," said Paula Gangopadhyay, The Henry Ford's chief learning officer.

Imagine, for example, how much better middle schoolers might relate to what it means to be a critical thinker — a problem solver — if they first see how some "real" teenagers just like them have devised a device that could help conquer the national distracted-driving epidemic. Teachers can show students the *Innovation Nation* segment on the Everts family and their Smart Wheel.

WATCH Everts family and their Smart Wheel thehenryford.org/innovationnation/episode1.asp ▶



From left, engineering students at a summer workshop ideate about innovation; Jessica Rodriguez (education staff) and Kathy Grosska (teacher fellow) get teachers signing up for Innovation Learning Accelerator at The Henry Ford's Annual Educator Open House; Liza Mathews (CA) and Theresa McGee (IL) practice 21st-century skills at the Innovation Immersion Experience. ▶

NATIONAL TEACHER INNOVATOR AWARDS

Teachers can learn how to teach innovatively from other teachers, right? That's part of the premise behind The Henry Ford's new National Teacher Innovator Awards. Starting last fall, teachers (along with people who know teachers) who are making creatively bold moves in their classrooms to engage students in innovative thinking could enter to win this award. Submissions are being accepted by The Henry Ford through February 6, 2015, and will be judged sometime this spring. Along with other prizes, the top 10 winners will be able to enjoy an all-expenses-paid weeklong Innovation Immersion Experience at The Henry Ford.

INNOVATION LEARNING ACCELERATOR

Hundreds of teachers across the nation have already started participating in the third piece of The Henry Ford's national innovation initiative, the Innovation Learning Accelerator (ILA). This program, first endorsed by President Bill Clinton in 2012 as an exemplary STEM (Science, Technology, Engineering and Mathematics) commitment to action at the Clinton Global Initiative America, is now post-pilot and in full swing of its first year of a five-year scale up. ILA has set goals to train and empower 5,000 teachers/leaders and inspire 125,000 students to cultivate an innovative mindset. Both on-site (at The Henry Ford) and online training, complete with a teaching innovation kit that includes the Innovation 101 curricula and instructional and innovator posters, are part of the package. "ILA is not just another professional development workshop," said Gangopadhyay. "It is a learning continuum, part of our national commitment to a learning revolution, where teachers as practicing innovators will learn, contribute and grow as catalysts for positive change in American education."

LEARN MORE

For details on the National Teacher Innovator Awards or to download The Henry Ford's free and teacher-endorsed Innovation 101 digital curricula, visit thehenryford.org/teacherinnovator.

To sign up to participate in the Innovation Learning Accelerator, contact Paula Gangopadhyay, chief learning officer, at 313.982.6063 or paulag@thehenryford.org.

MISSION

The Henry Ford provides unique educational experiences based on authentic objects, stories and lives from America's traditions of ingenuity, resourcefulness and innovation. Our purpose is to inspire people to learn from these traditions to shape a better future.

VISION

The Henry Ford will be a nationally recognized destination and force for fueling the spirit of American innovation and inspiring a can-do culture.

GOAL

Our goal is to be a catalyst for change in the American education system.



RUDY RUZICKA

The logo for The Henry Ford, featuring the words "the Henry Ford" in a white sans-serif font on a dark orange square background. To the left of the square are two overlapping squares, one white and one dark orange.

the
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thehenryford.org/teacherinnovator.
Applications due February 6, 2015.

Photo: Screen shot from The Henry Ford's OnInnovation website, featuring videos and educational materials to bring today's innovations into your classroom. Visit OnInnovation.com.

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- ▶ Tune in to **The Henry Ford's Innovation Nation** television series, Saturday mornings on CBS or watch episodes online.
thehenryford.org/innovationnation
- ▶ Join **The Henry Ford's Innovation Learning Accelerator**, and teach innovation with **Innovation 101** digital module.
thehenryford.org/education/erb/ILAfaq.pdf

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A car that gets 129 mpg? Edison2 designed it with Solid Edge.

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than the world does for you-
that is Success.” - Henry Ford

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www.community.ford.com

FERTILE GROUND FOR CREATIVITY

Companies
are dumping
org charts and
titles for improv
and employee
empowerment

By Todd Wasserman
Illustration by Melissa McFeeters



EMPLOYEES' DESKS AT GAMING COMPANY VALVE SPORT AN UNUSUAL FEATURE: WHEELS.

That's because they're designed to move. At Valve, if you want to work on a cool project, you don't go through the HR department to get reassigned, you merely move your desk — literally. There's even a large freight elevator operating in the middle of Valve's Bellevue, Washington, headquarters to easily facilitate the relocation.

"Think of those wheels as a symbolic reminder that you should always be considering where you could move yourself to be more valuable," states Valve's employee handbook. "There is no organizational structure keeping you from being in close proximity

to the people who you'd help or be helped by most."

Hire creative, self-driven people, set expectations and get out of their way. Create an environment where projects compete for people rather than people competing for projects. At Valve, employees are given goals, sure, but they are purposely never really told how to achieve them.

While this may sound like chaos to some, this type of management structure — called Open Allocation — has helped Valve become a \$2.5 billion company.



GOING MOBILE

Every desk at Valve is on wheels, symbolizing the gaming company's mantra that employees should be free to easily move from project to project and team to team as needed.

“There is no organizational structure keeping you from being in close proximity to **the people who you’d help or be helped by most.**”

— **Valve** employee handbook

Open Allocation is one of several new management schemes that have popped up recently as an offshoot of the open-source movement. Not everyone has gone to that extreme, but many firms are finding alternatives to the traditional top-down management structure that emphasizes rank and procedure. In its place is a decentralized approach to leadership in which titles mean less (or there aren’t any titles at all) and even the lowliest employees are encouraged to speak their minds.

At the bleeding edge of this movement is Holacracy, a management scheme embraced by companies ranging from online retailer Zappos to content publishing platform Medium. With Holacracy, the workplace is titleless and organized around individuals and individual tasks rather than a company mission.

MORE THAN A FAD

In the early part of the 20th century, there was a similar upheaval around Scientific Management. Created by Frederick Winslow Taylor, Scientific Management (aka Taylorism) broke down the production process into segments that are easy to teach new employees. The production line at a McDonald’s, for instance, is Taylorism applied to making hamburgers.

It’s easy to see why that approach doesn’t fly with, say, software engineers who are seeking a creative outlet for their talents. The Internet has allowed for physically distributed offices. Some companies — like GitHub and Automattic — are mostly composed of remote employees.

Another impetus is the type of work that’s being performed, which is most often ideation rather than

manufacturing. Many believe a loosey-goosey corporate structure provides a more fertile ground for creative thinking than a rigid hierarchy. Finally, the real-time nature of work today calls for a new model. As Brian Robertson, founder of the Holacracy paradigm, emphasizes, adaptive planning and responding to change work better in today’s world than predictive planning and control mechanisms. That is, they are more improvisational than following a plan to the letter.

Critics point out that Holacracy and other “flat” management structures (ones that lack a rigid chain of command) are just the latest in a long line of management fads. In 1970, for instance, Robert Townsend’s best-selling book *Up the Organization* advised chief executives to bypass PR and talk directly to the press and avoid hiring Harvard MBAs. Consensus Management, which was also in vogue in the 1970s, dispensed with the idea of a top-down structure in favor of a system in which everything was decided by a vote.

Robertson, a software entrepreneur, mulled all of these paradigms and more before “discovering” (he prefers that term to “creating”) Holacracy in the 2000s and launching the first Holacracy Constitution in 2009. A primary influence, though, was agile software, which calls for self-organizing teams that are empowered to make decisions about how they work together to deliver results.

Though agile software prompted Robertson to discover the wisdom of Holacracy, he said it’s adaptable to other types of work as well. “Holacracy itself will significantly change the work environment, so where you start from almost doesn’t matter,” he said. “If you succeed with the transformation, your culture and environment will be different.”

Much has already been documented about Medium, the content platform founded by two of Twitter’s co-founders, and its early adoption of Holacracy. At Medium, Holacracy has resulted in transparency and a razor-sharp focus on people — their tension points and individual motivations. Where meetings are never a blame game between the so-called big boss and bottom-rung employee, but often a discussion between colleagues about life outside of work rather than their tasks at work. Pay attention to the people rather than the problem or task, so says Medium, and watch productivity skyrocket.





BILL BOWEN

TAYLORISM VS. FORDISM VS. HOLACRACY

Many management styles have been conjured, practiced, reworked and discarded over the years. Each has its own take on the proper working relationship between people and profits. Take a closer look at a trio of work styles that have helped shape corporate America today.



TAYLORISM **FREDERICK W.** **TAYLOR, SCIENTIST**

Also known as Scientific Management, Taylorism applied scientific principles and measurements to the work process. Assumes that workers desire to be used efficiently, to perform their work with minimum effort and to receive more money. Requires a distinct disregard for human feelings and motivations. There's only one right way to do it. Humans become the machines.



FORDISM **HENRY FORD,** **INDUSTRIALIST**

Economic philosophy that widespread prosperity and high corporate profits can be achieved with high wages that allow workers to purchase what they produce. Mass production equals mass consumption. Requires a distinct division of labor — unskilled do simple, repetitive stuff; highly skilled get the glory, researching, designing and controlling the books. A dictatorship of sorts.



HOLACRACY **BRIAN ROBERTSON,** **SOFTWARE** **ENTREPRENEUR**

A governance of the organization, through the people, for the purpose. Requires no distinct single leader or collective group. Self-organizing teams are empowered to make decisions about how they work together to deliver results. Management without managers.

ONLINE Download the Holacracy Constitution at Holacracy.org/resources/Holacracy-constitution ►

ONLINE Hear what The Henry Ford has to say about Fordism. Visit oninnovation.com/videos/detail.aspx?video=2164&title=what ►



BILL BOWEN



ZAPPOS INSIGHTS

SHIFTING GEARS

After implementing Holacracy, consulting firm Undercurrent scrapped assigned seats for community work spaces. At the board (opposite page), strategists Kappie Farrington (left) and Erica Seldin brainstorm impromptu with Undercurrent partner Mike Arauz. Equally collaborative is Undercurrent's wall (top), where strategists Matt Daniels (left) and Alex Todaro discuss, visualize and document project next steps. At Zappos (above), Holacracy has helped align its culture-building Insights unit with others in the company.

MOVING FORWARD

Holacracy took another step forward in 2014, when high-profile Zappos got on board. Last year, the Amazon unit was phasing in Holacracy among its 1,600 or so employees. John Bunch, technical adviser to the CEO of Zappos — that's his title for now at least — said Zappos was about 75 percent through its rollout, with some units more ahead than others. "We're seeing a lot of benefits," he said. "One is the ability for groups to realign what work is already happening in the most efficient way."

One example of such a realignment is Zappos Insights, a unit at the company that is charged with sharing Zappos culture with the world. Since embracing Holacracy, the unit has been able to more closely align with another at the company that gives tours of Zappos' headquarters. A fairly modest payoff so far, but Bunch stressed that the company is still far from completing a full Holacracy integration. "I think we're seeing some positive signs," he said. "But it's too soon to tell."

Undercurrent, a strategy and management consulting firm, is further along in implementing Holacracy. The change is evident in the company's physical surroundings. "In keep-

ing with the 'roles, not souls' part of Holacracy, Undercurrent has no assigned seating in our office. We have a range of different kinds of work environments — some for focused heads-down work, some for collaboration, some more social and some more solitary — that people flow easily in and out of as their work focus shifts day to day," said Mike Arauz, a partner at the firm.

Arauz reported that, in practice, Holacracy is something of a mixed bag. It comes with a boatload of jargon, for instance, and because some embrace it and others remain skeptical, there is immediate tension, and some employees are inevitably alienated by the experience. Another troubling aspect, Arauz said, is that you have to pick teams for various projects, leading to some hurt feelings (and flashbacks to junior high school dodgeball games in gym class).

"What we were feeling before we adopted Holacracy was that our lack of structure in our operations and governance was holding us back," Arauz said. "But even adopting Holacracy hasn't been perfect. There's plenty about Holacracy that doesn't completely work for us. We're constantly looking for ways to optimize and improve it to suit our own needs."

Still, Arauz said, on the whole Holacracy has been a plus. He also stressed that he loves the way Holacracy approaches meetings. "I like the meeting practices in particular," he said. "The meeting rigor of being very explicit about the type of meeting you're having is very productive. That's one thing we're definitely keeping."

ANARCHIST'S UTOPIA

J.P. Eggers, a management professor at New York University, said despite buzzwords like Holacracy and flat management structures, there are really just two basic management approaches — the traditional top-down method and a more project- and team-based approach that has been ushered in by the knowledge economy. Eggers is suspect of schemes like Holacracy, which he said don't take into account human nature. "Some people are behaving as if there are no coalitions," he said. "But they're forming behind the scenes." Another issue, Eggers said, is that a project-based system works great for an already established firm, but not a startup, which demands a more top-down system.

A company like Apple, he added, is great at using the team approach to implement a vision or refine a product, but it was the dictatorial approach of Steve Jobs that actually forced innovations like the iPad and the iPhone.

Similar in its management duality is Zingerman's, based in Ann Arbor, Michigan. A \$40 million food-based business empire, Zingerman's has a hands-on leader in co-founder Ari Weinzweig, who calls himself a "lapsed anarchist." Weinzweig is, however, spinning anarchy in such a way that his relaxed approach to leadership and hierarchy is spurring creativity and collaboration rather than chaos.

"I don't really care about the government aspect one way or the other," said Weinzweig of his anarchist leanings. "What I am drawn to is the free choice, that everyone is an intelligent human being and an organization is there to serve ALL, not just the person on top. How you must create a setting where you believe everyone has equal value."

Every week, Weinzweig practices "equal value" during open-book finance meetings at his Ann Arbor eatery Zingerman's Roadhouse. While a typical \$40 million corporation would choose to air out profit positives and downfalls and financial forecasts among suits and ties behind closed doors, Weinzweig opts for a more casual gathering. Smart boards — with financials/forecasts related to labor costs, event catering, produce purchased, etc., scribbled on them — are propped up on chairs in the restaurant's back dining room. And every Zingerman's employee, from the sandwich makers and bus boys to event planners and financial managers, is invited to attend and contribute ideas, never pigeonholed by their title or job description. "When you respect your employees enough to show them the bigger picture, allow them to choose to participate and ask them to share in the decision-making, everyone is willing to make sacrifices for the greater good when they have to," said Weinzweig.

Case in point: When Zingerman's Bakehouse was facing tough times during the economic downturn, a fear of layoffs loomed. But instead of the situation festering, employees were privy to the challenging financial outlook and quickly took ownership of what was happening to their workplace, with some even taking pay cuts so other employees could possibly avoid losing their jobs. (After the Bakehouse bounced back, Zingerman's retroactively paid employees who took the cut.)

"When you view work as a way to contribute to life, to contribute to other people around you, it's fun and rewarding," said Weinzweig. "Everyone needs to be responsible for leadership, be willing to take risks in a collaborative way and face failure — because you can't do anything without failure."

In other words, when workers like what they do and feel creatively fulfilled, they are eager to participate and willing to sacrifice for a higher purpose. And if they don't, they can always wheel their desk somewhere else. ●

SHARING AND CARING

Clockwise from below: All Zingerman's employees are welcome and encouraged to take the floor during open-book finance meetings held weekly at the Roadhouse restaurant in Ann Arbor, Michigan. Often in attendance at these casual gatherings is Zingerman's co-founder Ari Weinzweig (center and opposite), who touts that every organization is there to serve all, not just the person on top.



READ *The Great Game of Business: Unlocking the Power and Profitability of Open-Book Management* by Jack Stack ►

IT'S ALL ABOUT PEOPLE

HERMAN MILLER LEADER MAX DE PREE REDEFINED THE WORKPLACE'S PURPOSE

"The first responsibility of a leader is to define reality. The last is to say thank you. In between the two, the leader must become a servant and a debtor," Max De Pree wrote in his best-selling classic *Leadership Is an Art*. During his tenure as CEO and then chairman of Herman Miller, the innovative Michigan-based furniture maker, Max De Pree demonstrated that he had a great understanding of the tools he had to work with: people. His "concept of persons" and "concept of work" were distinctly different from those held by many of his peers and informed the reality he defined to make Herman Miller an extremely profitable, productive company.

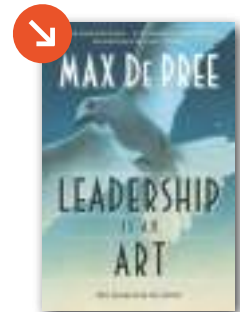
Just as his millwright on the factory floor understood that to make a beautiful product it was necessary to get the best out of his equipment by using it properly, occasionally finessing it and ensuring it was well maintained, Max used his leadership to create an environment that took people seriously. His leadership made room for others to use their gifts and thrive. He understood that people are often larger than their job descriptions, and for them to truly do their best in their jobs, they need work that goes beyond the mere performance of tasks. People need work in which they can fully participate, bringing ideas and abilities that often extend beyond the limitations of a job description; they need to do meaningful work producing "good" goods in a place where it is OK to be human — where one can experience such human qualities as kindness, love, inclusion and forgiveness. Where beauty, meaning and poetry are considered vital to the human work experience. In essence, people need a place for realizing their human potential. And by providing such a context, Max built a thriving, highly valued and widely acclaimed business.

Fortunately for us, Max's leadership legacy continues to resonate in the stories and ideas he recorded in his books, like *Leadership Jazz* and *Leadership Is an Art*. Even now, each reading is rewarded with fresh insight and inspiration. One of my recent favorites: "We cannot become what we need to be by remaining what we are." Yes, indeed!

— CATHERINE BEATON, CREATIVE DIRECTOR, MAX DE PREE CENTER FOR LEADERSHIP

DID YOU KNOW? / Michigan-based Herman Miller Inc. revolutionized the way we work, giving the world some of the most iconic objects of the century, including Charles and Ray Eames' molded plywood Lounge Chair, George Nelson's Marshmallow Sofa and Bill Stumpf and Don Chadwick's Aeron Chair.

DID YOU KNOW? / The Henry Ford is the lead institution in The Herman Miller Consortium, a group of 13 art and historical institutions that share approximately 800 artifacts collected by Herman Miller Inc.



MARVIN SHAOUNI



READ The series of leadership books by Ari Weinzwieg zingermans.com ►

ARI'S A to V LIST

A: Stands for stuff we all ASPIRE to. V: Stands for stuff that creates a culture where VICTIMS rule. Managers have bad days, so do employees. People act inconsistently all the time. "The hardest thing to break is, employees are inclined to silence. They are afraid to say it," said Zingerman's co-founder Ari Weinzwieg. "Managers need to be more responsive and employees need to be more persistent." Weinzwieg has a to-do list of A vs. V actions that can help you see the potential error of your management ways. A top 10:

- | | |
|--------------------------------|-----------------------------|
| A: Be considerate | V: Be rude |
| A: Be consistent | V: Be all over the place |
| A: Be reasonable | V: Be arbitrary |
| A: Good energy | V: Bring bad energy to work |
| A: Be humble | V: Hog the credit |
| A: Take responsibility | V: Act like you didn't know |
| A: Believe in those around you | V: Constantly criticize |
| A: Follow through | V: Drop the ball |
| A: Listen well | V: Tune out |
| A: Be real | V: Fake it |



LEADERS:

BORN OR

MADE?



Is President Lincoln's legacy the definitive clue to whether great leadership skills are innate or learned?

By Michael Lynch | Illustration by Christian Northeast



Remembering Lincoln is a venerable American pastime.

In an influential book, historian Merrill Peterson identified a number of prominent ways we've looked back on our most popular president — Lincoln the Emancipator, Lincoln the Man of the People, Lincoln the First American and so on.

Our most recent bout of Lincoln mania has added another theme to the list: Lincoln the Leader. We're not just interested in commemorating him; we want to learn from him, to get at whatever it was that made one of the least prepared American presidents into one of the greatest. We want to crack the code and define exactly what enabled him to steer the ship of state through its worst storm, and to determine whether these qualities were innate or acquired.

A POLITICAL MODEL

Politicians have been invoking Lincoln's example and trying to channel his magic for some time. Theodore Roosevelt, who wore a ring with a lock of his famous predecessor's hair to his 1905 inauguration, kept a portrait of Lincoln in his office. He once told a reporter, "When I am confronted with a great problem, I look up to that picture, and I do as I believe Lincoln would have done."

Herbert Hoover, Harry Truman and Dwight Eisenhower were also Lincoln aficionados. So was Adlai Stevenson, who said, "A man in public office can find no surer guide than Lincoln."

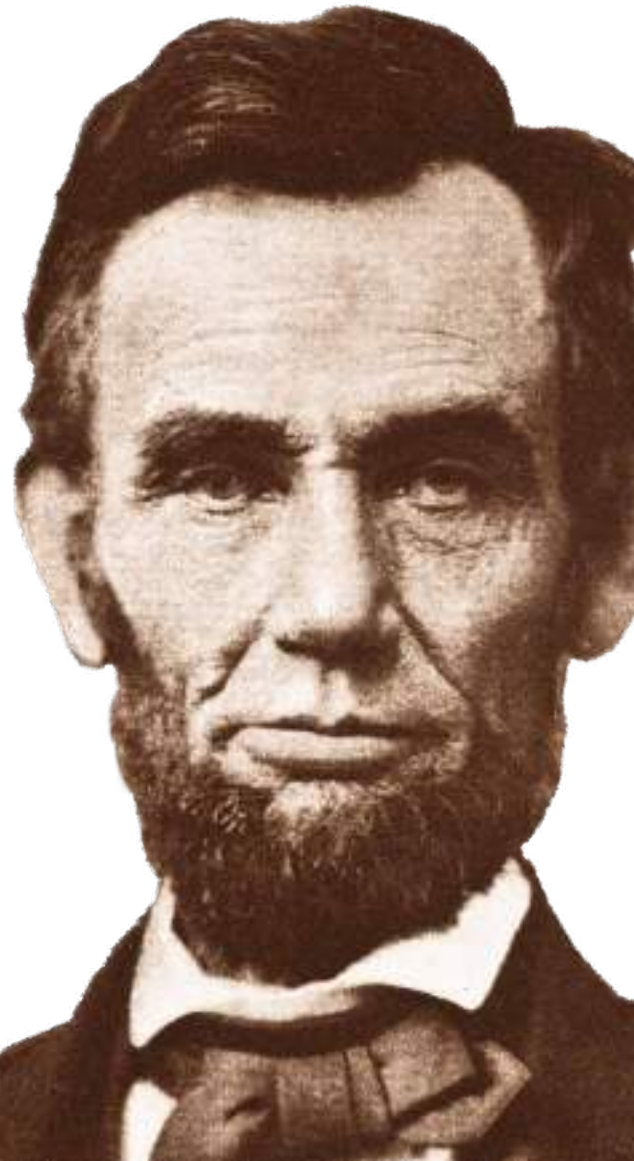
The White House's current occupant also has never been shy about his admiration for the Great Emancipator. President Obama cited a Lincolnian precedent when he tapped Hillary Clinton to be his secretary of state, noting that Lincoln recruited his fellow contenders for the 1860 Republican nomination to build his cabinet.

Lincoln's ability to build a coalition of advisers out of former foes is at the heart of author Doris Kearns Goodwin's best-selling *Team of Rivals*. So popular has the book become that the phrase "team of rivals" has become a sort of popular shorthand for any political coalition built out of contentious elements.

Goodwin didn't start out with the intention of writing a book on Lincoln's cabinet. She said she felt drawn to the president himself. "Lincoln was sort of out there like Moby Dick to historians. You just want to try and understand him."

A visit to the home of William H. Seward, Lincoln's secretary of state, is what prompted her to think about the men around Lincoln. After reading correspondence of Lincoln's cabinet members, Goodwin realized that the president had somehow turned a group of strong-willed antagonists into assets. "As much as they fought against each other, he was able to marshal their talents to help run the country and win the war," she noted.

Eventually, even egotistical men who treated him dismissively or with contempt came to admire him. That sort of deft management of personalities is one of the qualities modern political figures find most impressive about Lincoln. But it's not just politicians who want to emulate him. Business and finance leaders are also eager for a little of that Lincoln magic.





HIS CLASSROOM WAS HIS LIFE

Nancy Koehn — who holds the James E. Robison Chair of Business Administration at Harvard Business School and provides coaching for executives, MBA students and investment bankers — has been incorporating historical case studies into her work for some time. She describes her work as “helping business executives work on their own leadership by working on themselves.” She often uses figures such as Lincoln and Antarctic explorer Ernest Shackleton as examples to impart practical lessons.

Koehn spent a decade at Harvard Business School before developing an interest in Lincoln, finding herself drawn to the personal and emotional side of his story. From her reading grew a sense that his leadership qualities were learned, not innate, and that she could help modern leaders develop them. She is convinced that Lincoln was made rather than born; it wasn’t some sort of elusive fairy dust that gave him his ability to lead, but deliberate effort.

“It starts with this willingness and openness to self-teaching,” she said. “He taught himself how to be better, how to use his gifts and how to use his experiences.”

Lincoln has long been held up as the prime American example of an autodidact dedicated to self-improvement. Even as a young man on the frontier, his reputation for intelligence and learning earned him the respect of neighbors. It gave him the momentum he needed to realize his ambition. “He must have known how smart he was,” Goodwin said. “Somewhere along the line, he began to feel that he was different from the people that he was living with and wanted more than they did.”

He knew how to learn from books, and he knew how to learn from his

own experiences. “He learned by what doesn’t work,” Koehn explained. “He doesn’t say, ‘Oh, I failed, that’s terrible.’ He says, ‘What should I do differently?’”

And he never stopped learning. “The most important learning he does, and it’s learning on steroids, is the learning he does as president,” Koehn noted. Thrown into the worst crisis faced by any president up to that time, he had to adapt while on the job. Luckily, this man whose formal schooling had been minimal had a remarkable aptitude for self-education. “His classroom was his life’s journey,” Koehn said.

Personal qualities helped him along the way, too, such as humility. We generally associate leadership with assertiveness, but Koehn believes Lincoln’s ability to swallow his pride was the bigger asset. “He learns to take his emotions and not act on them in any way publicly,” she noted.

Perhaps a sense of the magnitude of the task before him allowed Lincoln to overlook slights and prerogatives. Getting the job done was ultimately what mattered. “The presidency chastened Lincoln,” Koehn said. “It rubbed down all that raw ambition.”

Lincoln was also famous for his empathy, whether that meant sympathy for soldiers condemned to death for desertion or the ability to view a situation from an opponent’s perspective. Before his election to the presidency, Lincoln gave a speech in Peoria, Illinois, on the slavery controversy. While condemning human bondage as a grave evil, he also told his audience that Southerners were no more inherently immoral than their countrymen in the North. In the contentious atmosphere of the 1850s, noted Koehn, this was a remarkable statement.

“He taught himself how to be better, how to use his gifts and how to use his experiences.”

— Professor Nancy Koehn

DID YOU KNOW? /
Lincoln’s profile has graced our penny since 1909.

DID YOU KNOW? /
Lincoln was assassinated 150 years ago on April 15, 1865.

DID YOU KNOW? /
In the movie *Fight Club*, Brad Pitt’s character Tyler Durden remarks that if he could fight any historical figure, he’d choose Lincoln. “Big guy, big reach. And skinny guys fight ‘til they’re burger,” he said.

DID YOU KNOW? /
Found in Lincoln’s coat pockets the night he was shot: newspaper clippings, two pairs of spectacles, a knife, wallet, watch fob, handkerchief and a Confederate \$5 bill.

DID YOU KNOW? /
Abraham Lincoln has inspired a font, or typeface, which is described as tall, skinny and honest.

DID YOU KNOW? /
When the History Channel polled adults across the U.S. in 2012 and asked them what leader they would like to bring back to run the country, President Lincoln garnered an overwhelming 67 percent of the vote.

LINCOLN ON THE PAGE

The Henry Ford’s Benson Ford Research Center has an extensive library of good reads related to our 16th president, including:

Team of Rivals: The Political Genius of Abraham Lincoln by Doris Kearns Goodwin

Lincoln on Leadership: Executive Strategies for Tough Times by Donald T. Phillips

Lincoln’s Men: How President Lincoln Became Father to an Army and a Nation by William C. Davis

Mr. Lincoln’s T-Mails: The Untold Story of How Abraham Lincoln Used the Telegraph to Win the Civil War by Tom Wheeler

Lincoln’s War: The Untold Story of America’s Greatest President as Commander in Chief by Geoffrey Perret

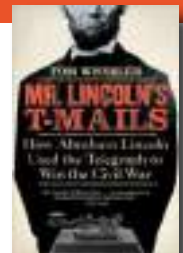
With Charity for All: Lincoln and the Restoration of the Union by William C. Harris

Giants: The Parallel Lives of Frederick Douglass & Abraham Lincoln by John Stauffer

Lincoln’s Sword: The Presidency and the Power of Words by Douglas L. Wilson

Lincoln on Democracy edited by Mario Cuomo and Harold Holzer

Lincoln’s Quest for Equality: The Road to Gettysburg by Carl F. Wick





LEAD LIKE LINCOLN



Lincoln's leadership magic was a little bit of this and a lot of that. Here's a short list, in no particular order, of some of the traits and skills the experts say Lincoln possessed that made him such an emblematic leader.

ADAPTABILITY

Lincoln could think on the fly

EMPATHY

Lincoln respected other points of view

HUMILITY

Lincoln knew how to swallow his pride

RESILIENCE WITH A DASH OF FLEXIBILITY

No matter the obstacle, Lincoln never lost sight of his original goal

WILLINGNESS TO LEARN

Lincoln knew you're never too old to learn something new

MEDIATING

Lincoln knew how to keep his friends close and his enemies closer

RESILIENCE WITH FLEXIBILITY

Charles M. Hubbard, former director of Lincoln Memorial University's museum, now runs LMU's Abraham Lincoln Institute for the Study of Leadership and Public Policy. Like Koehn, he incorporates historical insights into practical and modern questions of leadership. "Lincoln provides the historical personification of the traits and characteristics generally found in outstanding leaders," said Hubbard. "Further research into his leadership personality can benefit leaders in areas other than history."

Hubbard oversees graduate students whose dissertations combine historical research with modern leadership theory in an attempt to define precisely what sort of leadership styles Lincoln employed and how to put them into practice.

Asked to name the Lincolnian leadership trait he finds most striking, Hubbard shared, "Lincoln's ability to remain flexible and open to various points of view, while not losing sight of the objective. His ability to remain committed to the ultimate goal without becoming obstinate and stubborn to the point of obstruction is an amazing talent, particularly in a politician."

This unusual and seemingly paradoxical combination of flexibility and resiliency is something Koehn also finds striking. "We think of persistence and commitment to mission, but he also is willing to play the cards he needs to play."

For leaders, the ability to define and explain one's objectives is as

important as the determination to pursue them. When training executives, Koehn uses Lincoln's writings to underscore the connection between leadership and language. She recently led a session in which she walked a group through Lincoln's *Gettysburg Address* as an example of motivational rhetoric: The speech opens with what is at stake, narrows its focus down to the immediate situation on the battleground and then broadens out again toward the work yet to be done.

Surprising as it may sound to bring the *Gettysburg Address* and other 19th-century documents into the boardroom, Koehn finds that business leaders are eager to learn from Lincoln. "They are very, very open. 'Give me something that's stood the test of time.'"

The Lincoln name carries quite a bit of weight with people who want to learn how to lead. "There's something about the enduring nature of that impact that makes people perk up their ears and stand a little taller," said Koehn.

Perhaps the notion that Lincoln's knack for leadership was not innate but learned, that we can deconstruct him and reverse engineer him, robs him of a little of his mystique. If we can learn to be like him and create modern Lincolnian leaders, he becomes a little less singular. But Koehn finds this approach to Lincoln as a practical model inspiring. "If he can do it," she said, "lots and lots of other people can do amazing things." •

WATCH

Ken Burns' documentary titled *The Address*, which originally aired on PBS in 2014
pbs.org/kenburns/the-address/home ▶

ONLINE

Read Nancy Koehn's blog for other lessons on leadership
nancykoehn.com/blog ▶

©ISTOCK.COM/KARSOL

ONLINE

Download Lincoln's Legacy of Leadership teacher packet,
thehenryford.org/education/erb/lincolnslegacyofleadership.pdf ▶

Keep your eyes out for the Mold-A-Rama machines in Henry Ford Museum, where you can make a bust of Lincoln and score one honest souvenir. ▶



▶ A must-read for history buffs, toastmasters and every Lincoln admirer. Includes hundreds of inspiring quotes, amusing anecdotes, salty stories, observations and Lincoln lore.

ONLINE

The Wit and Wisdom of Abraham Lincoln
giftshop.thehenryford.org ▶

FROM OUR COLLECTIONS



A SEAT IN HISTORY

After President Abraham Lincoln was assassinated on April 15, 1865, an unlikely symbol of Lincoln's greatness and personal sacrifice emerged.

The night of the crime, Lincoln was sitting in a comfortable parlor rocker that had been placed in the viewing box at Ford's Theatre specifically for his use that evening.

After the assassination, enterprising photographers sold pictures of the blood-stained chair to a nation eager for images related to the heinous event. The chair was also used as evidence in the criminal trial of the conspirators.

After that, however, it languished in government storage for decades. Originally the personal property of Ford's Theatre manager Harry Ford, his widow eventually petitioned for its return in the late 1920s.

When she decided to sell it at auction in 1929, an agent for Henry Ford eagerly snatched it up.

At the time, Ford was collecting objects for placement in Henry Ford Museum and Greenfield Village. Always appreciative of artifacts

associated with great Americans, especially those who came from humble backgrounds, Ford clearly understood the importance of the rocking chair where President Lincoln once sat.

Today, Lincoln's chair is on permanent display in Henry Ford Museum as part of the *With Liberty and Justice for All* exhibit.

In a blog post, Charles Sable, curator of decorative arts at The Henry Ford, said this about visitor reaction to the chair: "They are drawn to it not simply because of its role at the center of a tragedy, but as a symbol of a beloved president. There is a unique sense of awe and reverence that the chair provides. As such, this rocking chair personifies the sacrifice made by Abraham Lincoln in fashioning a more perfect Union."

— Jennifer LaForce

Henry Ford photographed and filmed the arrival and unpacking of the crate carrying Lincoln's rocker, which was initially displayed in the Logan County Courthouse in Greenfield Village. ▼

ONLINE Watch the unloading and unpacking of Lincoln's chair tinyurl.com/p5vg38e ▶

FROM THE COLLECTIONS OF THE HENRY FORD



SPECIAL EVENTS

The 150th anniversary of President Lincoln's assassination

Lincoln's Legacy: An Evening with Doris Kearns Goodwin*

Henry Ford Museum
Anderson Theater
April 13 (

Join The Henry Ford for a lively conversation with famed author of *Team of Rivals: The Political Genius of Abraham Lincoln*, Doris Kearns Goodwin. Expect Goodwin to elaborate on Lincoln's mastery of men and how it shaped the most significant presidency in the nation's history.



ERIC LEVIN

*Additional fee and/or advance reservation required

TICKETS FOR LINCOLN'S LEGACY: AN EVENING WITH DORIS KEARNS GOODWIN ON SALE FEBRUARY 26

Lincoln Remembered**

Henry Ford Museum
April 15

Museum admission will be waived this day in memory of the 150th anniversary of President Lincoln's assassination. Experience a rare moment on the museum floor as the chair in which Lincoln was sitting when he was shot will be removed from its glass enclosure and placed on a special stage for a close-up look.

**Museum fee waived courtesy of Target

LINCOLN IN POP CULTURE

Abraham Lincoln has appeared in hundreds of films and TV shows over the last century. Sometimes as the main character in a reverent biopic, other times as a cameo in places unexpected. Here's a random pick list.

1915 D.W. Griffith's film *Birth of a Nation*
A silent film with loud racist undertones

1939 *Young Mr. Lincoln*
A youthful Henry Fonda takes on the president's legendary persona

1961 *The Twilight Zone*
Watch the episode titled *The Passersby*



1969 *Star Trek*
Kirk, Spock and Lincoln on the volcanic planet of Excalbia — episode *The Savage Curtain*



1989 *Bill & Ted's Excellent Adventure*
"Be excellent to each other, and party on dudes!"
— Abraham Lincoln

1999 MTV's *Celebrity Deathmatch*
George Washington vs. Abraham Lincoln

2007 *South Park*
Abraham Lincoln's ghost warns of what an inflated ego can do — episode *The List*



2009 *Night at the Museum 2: Battle of the Smithsonian*
Lincoln's statue in the Lincoln Memorial comes to life

2012 *Lincoln*
Actor Daniel Day-Lewis as Lincoln in Spielberg's award winner



2013 *Killing Lincoln*
TV movie inspired by the book from love-him-or-hate-him political commentator Bill O'Reilly

ONLINE For more information, visit thehenryford.org/lincoln150 or call 313.982.6001 ▶

Powered by The Henry Ford, OnInnovation is a video oral history project designed to advance a culture of innovation through interviews with today's visionaries. Here are edited excerpts from one of those interviews, which can be viewed in its entirety online at the OnInnovation (OI) website oninnovation.com.



CHARLES
ELACHI

The EXPLORER

**THE STARGAZER AND SCIENTIST HAS DISCOVERED
THAT YOU HAVE TO LET GO TO BE A GOOD LEADER**

DID YOU KNOW? / NASA and the Jet Propulsion Laboratory have an Educator Resource Center that offers free math and science materials, training workshops and other teaching tools to educators. Visit jpl.nasa.gov/education or call 818.393.5917 for more information.

As a kid growing up in a little village in Lebanon, Charles Elachi was always fascinated when he looked up. The star-filled sky above made him wonder: Are there other life forms out there doing the same thing — looking up at me?

When The Henry Ford sat down with Elachi in 2009 as part of its OnInnovation oral history project, he still had a childlike giddiness about him as he talked about the stars and exploring our solar system and universes beyond. As the current director of NASA's Jet Propulsion Laboratory (JPL), Elachi remains a leading force behind the United States' space exploration program. (He's the guy responsible for launching spacecraft to orbit Saturn and its many moons and for sending those rovers now roaming the surface of Mars — among many other galactic accomplishments.)

With more than 40 years at JPL, Elachi has learned a thing or two about being a strong leader and inspiring innovation. He doesn't claim to know everything, he's not afraid to take the heat when his team fails (or share kudos when a big victory is in sight) and he's always searching for young talent because he sees great value in those who think nothing is impossible. ▶



DID YOU KNOW? /
Charles Elachi
considers Teddy
Roosevelt his hero.

DID YOU KNOW? /
Soil examined by NASA's Viking Mars Landers in 1976 may have contained carbon-based chemical building blocks of life.



DID YOU KNOW? /
The Mars Program's exploration strategy is known as "Follow the Water," observing features such as dry riverbeds, ice in the polar caps and rock types that only form when water is present.

OI ▶ How does one lead NASA's space exploration house?

Elachi ▶ You always tell your team to remember that, most likely, things will not work the first time. And if you get discouraged after failure, you'll never be able to innovate.

OI ▶ Where do you start when you want to explore space?

Elachi ▶ The most important thing you need on an expedition of exploration is a good team, because there is this guarantee that problems are going to happen. There will, in fact, probably be problems every other day. Your best bet is to have a team that is with you, able to address those problems, overcome them and move on. No matter how good your design is at the beginning, once you start building, you're going to find issues. Interaction between intelligent people is what will create the innovation.

OI ▶ How fun is it to imagine and build a spacecraft? Explain the anatomy of a space exploration project.

Elachi ▶ We have more than a dozen spacecraft across the solar system. The lingo here at JPL is that the solar system is our backyard. We get to play in that backyard, but it's serious play.

At first, we're just thinking about doing a flyby. Then, we want to orbit. After the orbiters — and we see things that are geologically very interesting — then we basically want to do what any typical geologist wants to do. We want to get to the surface, walk around, pick up a rock, look at it and test it.

If you're on Mars, of course, you can't just do that, right? It's beyond our current capabilities to send an astronaut. So, instead we build these rovers to be the equivalent of a human geologist.

We had teams of people that got together and started thinking crazy ideas about ways we could get on Mars. For us, it's the equivalent of standing in California, hitting a golf ball towards St. Andrews in England and getting the ball in the cup, which is moving at high speed.

To land a rover on the surface of Mars, we have to start with a heat shield to slow us down, then we have to use a parachute to slow down even more and a rocket to slow down even more. But what about those last 10 meters? Someone came up with the idea to use a bunch of air bags around the rover and just let it bounce. At first it sounded crazy, but actually that's what we ended up doing. The rover gets about 30 feet from the surface, huge air bags inflate and then we let it bounce, bounce, bounce. Once it stops bouncing,

we deflate the bags and the rover comes out and has to quickly adapt to an environment never encountered.

OI ▶ You make it sound fairly simple. Was it?

Elachi ▶ Sure it sounds like a simple idea until you start testing. Parachutes broke; air bags were punctured. Literally, every day there was an issue the team had to address.

OI ▶ How do you keep the team motivated through continuous setbacks?

Elachi ▶ You have to stay calm, calm, calm. Your first reaction needs to be, "OK, now how do I solve the problem?" versus "Oh God, we are in deep trouble."

I think that's a characteristic of true innovators. They don't get discouraged or disheartened by a setback. They keep trying again and again, bringing in additional people with different ideas to figure it out.

OI ▶ Your biggest challenge when it comes to leading a team?

The biggest challenge for any leader is how do you get your team charged, excited and passionate and think there is purpose to what they are doing. And then how do you help guide them. For me, how do I make sure I have a team of 1,000 people all working together, using their collective knowledge to build complicated machines?

My team knows that if there is success, they'll be sitting at the podium. If they fail, I will be sitting at the podium. They know calculated risk is encouraged. Yes, we have to be thoughtful about it — not foolish about it — but I'm not going to let them go down if they fail taking a risk I agreed to.

My first reaction when something goes wrong is not to assign blame, but to say, "OK, how do I lift them up? How do I support them to make sure we overcome the setback?" Exploration is a risky business. If we were always successful, I would wonder if we were trying hard enough. The key is, when you overstep or push the limits, you are able to get back up, learn from it and move ahead.

OI ▶ Do you consider yourself an idealist/optimist?

Elachi ▶ You have to be positive and stay curious. I believe that if you are positive and uplifting, you live longer. And you always need to keep asking questions. Every time we complete a mission, every time we do a new experiment, we create more questions. We delve deeper into understanding how did the solar system evolve? We create more wonder about the worlds around us. As scientists, you are never at the end; you will never reach full knowledge.



© BILL INGALLS/NASA/HANDOUT/CNP/CORBIS

WAY TO GO

In Pasadena, California, NASA Administrator Sean O'Keefe (in red) and Jet Propulsion Lab's Dr. Charles Elachi embrace while looking at the first images arriving from Mars after the landing of Spirit on January 3, 2004.

“You have to bring in the best people in the world, **give them a good environment and get out of the way.**”

— Charles Elachi

OI ▶ Are there other leadership lessons you could share?

Elachi ▶ No. 1: You have to have a vision and be able to articulate your vision, get your team excited. So you have to have passion yourself for doing what you're doing. If you don't have passion, you won't be able to transmit your vision. No. 2: You have to bring in the best people in the world, give them a good environment and get out of the way. I don't know all the details. That's why I bring in the experts, people with different backgrounds — mechanical engineers, electrical engineers and so on. We also make sure we bring in young people — nothing seems impossible to them. To balance, we have experienced people who have seen it before and know where you get in trouble.

OI ▶ Is this a business with big egos, lots of arguments?

Elachi ▶ We debate and argue, sure, but as long as it's done professionally and with respect for each other, we encourage it. When you're passionate about something, you're prepared to fight for it. Some of the most valuable people on a team are the ones that are the biggest pains in the neck. These are the people always thinking of problems, but keep us prepared for the "what ifs."

OI ▶ How do you identify people who are motivated, right for your team?

Elachi ▶ When I meet with new employees, I tell them: "If you're looking for a regular job, this is the wrong place for you. But if you have a passion for exploration, if you

would love to go home and tell your girl-friend, your mom, your spouse that you just landed a spacecraft on Mars or just flew to Jupiter, then this is the right place for you.

You have to believe in what you are doing, take the setbacks even when it's hard and overcome.

OI ▶ You talked about the solar system as your team's playground. How do you keep the working environment playful yet mindful in such a high-stakes business?

Elachi ▶ Having fun is a big part of being passionate about what you do. Every time we launch a spacecraft, we have to be very serious about it because we are spending taxpayer money and people have spent years and years designing these missions.

MISSIONS TO MARS

The anatomy of space exploration of a planet, according to Charles Elachi of NASA's Jet Propulsion Laboratory, is that first you experiment with flybys, then you try orbiting and finally you kick things into high gear and figure out a way to land on solid ground.

MARINER (1964, 1969)

Several Mariner spacecraft get up close and personal with Mars, doing flybys, taking pictures and looking for signs of life.



MARINER (1971)

Mariner No. 9 puts the U.S. on top of the Soviet Union — the first spacecraft to orbit another planet, Mars.



VIKING 1 & 2 (1975)

These two orbited and then landed on Mars to further investigate the surface and signs of life.



OBSERVER (1992)

Like the name says, Observer headed to Mars to orbit, observe and photograph the Red Planet's surface.



MARS GLOBAL SURVEYOR (1996)

This orbiter was a game changer, collecting dramatic evidence that water still flows in short bursts on Mars.



PATHFINDER/SOJOURNER ROVER (1996)

Pathfinder drops off Sojourner, the first wheeled vehicle to hit the ground of Mars running.

ALL MARS ROVER IMAGES COURTESY OF NASA/JPL-CALTECH, EXCEPT FOR SPIRIT, COURTESY OF NASA/JPL/CORNELL UNIVERSITY

On the other hand, the work has to be fun or who is going to come here and work 60, 80 hours a week until the job is done?

Every morning, I look forward to whatever problem I might face because I am going to learn something new, be enriched and maybe become a little bit smarter. I think most of the people at JPL think about it that way. That this is a playground, but a serious playground.

OI > Why explore? Why do you do it?

Elachi > If our ancestors were not curious, we would still probably be sitting in caves drawing on walls. But they were curious. They wanted to see what's outside. They knew it was dangerous, but they wanted to explore anyway. It's part of human character.

There is this urge to know, be it for intellectual purpose, economic purpose or political purpose. It's an urge we have as humans. On a more scientific basis, I find it fascinating how some 13 billion years ago there was a Big Bang. As we explore space, we are kind of writing the book of how things evolved from that Big Bang. How a bunch of particles got together to create galaxies, planets, life — intelligent life.

We can't write that book in one single sweep. Step by step, we are learning first about our planet, our solar system and then beyond our solar system. If we can find that life evolved somewhere else besides Earth, that would be mind-changing. On the other hand, if we find that we are the only people in this huge universe — billions of stars — that would be equally mind-boggling. •

DID YOU KNOW? /
Pathfinder was the first Mars mission that the public could follow on their computers.

ONLINE For more of OnInnovation's archived interviews, such as the one conducted with Charles Elachi, along with related resources, visit oninnovation.com >

ONLINE The Google Lunar XPRIZE contest is inspiring up-and-coming/backyard space explorers to design budget-conscious robotic transport options to the moon. Lift-off and landing must occur before December 31, 2015. googlelunarxprize.org >

ONLINE NASA and the Jet Propulsion Laboratory have a series of classroom resources on Mars exploration. mars.jpl.nasa.gov/participate/marsforeducators >



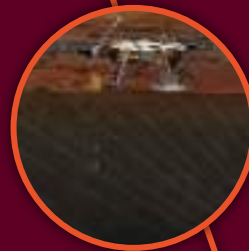
MARS RECONNAISSANCE ORBITER (2005)

MRO is still circling up there, studying Mars' atmosphere and terrain.



CURIOSITY (2011)

Considered the most advanced rover ever built, Curiosity landed in Mars' Gale Crater.



INSIGHT (2016)

This lander will drill beneath Mars' surface, probing for answers about why the planet has such a rocky terrain.



SPIRIT & OPPORTUNITY (2003)

Both of these wheeled rovers planked themselves on Mars and started searching around for traces of past life.



PHOENIX (2007)

This lander hit the surface of Mars in the hunt for evidence of even the tiniest specs of microbial life.



ODYSSEY (2001)

Odyssey has more than 10 years and counting of collecting data about Mars' climate and geology.



MARS 2020 (2020)

Is Mars habitable by humans? This rover is set to assess the planet's natural resources and hazards.

In the MarsYard, two spacecraft engineers join vehicles that provide a comparison of three generations of Mars rovers developed at NASA's Jet Propulsion Laboratory.

MARSYARD

NASA/JPL-CALTECH

PLAYTIME IN NASA'S PLAYGROUND

Work is work, but that doesn't mean it can't, or shouldn't, be fun. The team at NASA's Jet Propulsion Laboratory (JPL) probably understands this better than anyone. They are doing some of the most technologically advanced, high-stakes work on Earth as well as on other planets — literally. And they get to play around with their innovative ideas and designs in some of the most interesting labs and, as JPL's director Charles Elachi calls it, "serious playgrounds" ever constructed.

Both the vacuum of outer space and the rusty surface of Mars can be found on JPL's Southern California campus. Here, a sandbox of sorts has been designed to replicate Martian terrain, and a thermal vacuum chamber simulates the harshness of space. These spaces are vital to JPL's tradition of innovation, said JPL historian Erik Conway, because they allow engineers to test their spacecraft designs in the closest thing to real-world conditions possible on Earth.

The highlight may be the MarsYard II, a 21-meter by 22-meter "playground" designed to replicate the surface of the Red Planet. A mixture of beach sand, decomposed granite, brick dust and volcanic cinders simulates Martian dirt, while a smattering of red and black rocks — various types of basalts — are designed to mimic the boulders on Mars. There, engineers put future rovers through their paces to make sure wheels and machinery can withstand the landscape on our neighboring planet.

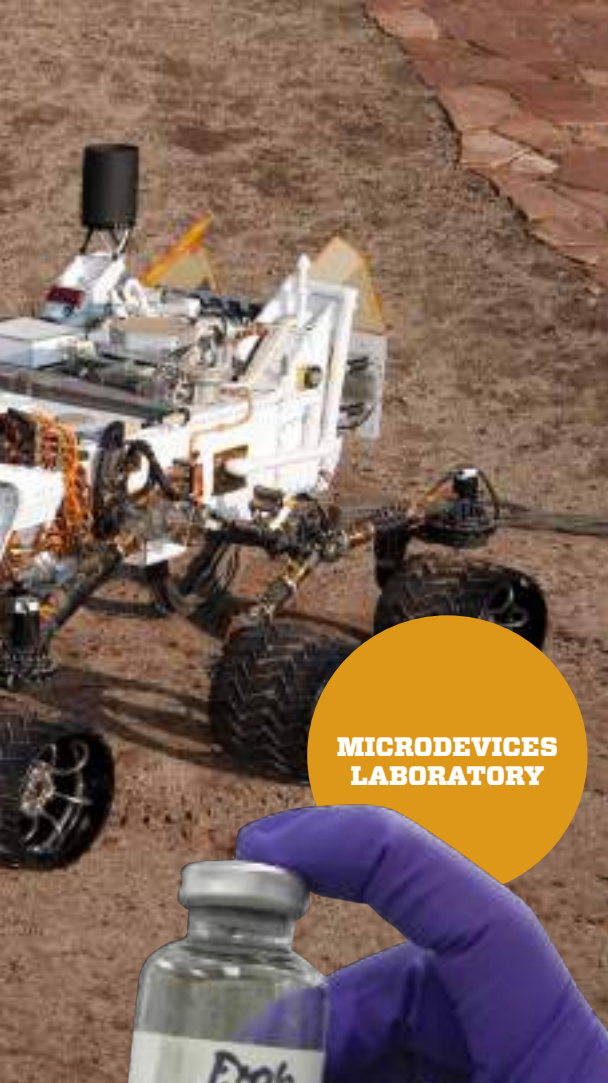
Other exceptional facilities include the space simulator, an 86-foot-tall, 25-foot-wide cylindrical thermal vacuum chamber

that can reproduce the conditions of space, from the absence of air to the extreme cold and harsh sun. A giant bank of lights at its top simulates sunlight, while cooling coils can drop its temperature far below freezing. "We use it to ensure the spacecraft won't just survive but will operate properly in the cold and heat of space," Conway said.

JPL's Microdevices Laboratory is where the tiny sensors and instruments for new spacecraft are built. Its 11,000 square feet contain special lasers, microscopes and tools for fabricating devices at the micrometer and nanometer scale, well below the range of the human eye. And, of course, there are state-of-the-art clean rooms — two giant white hangars where spacecraft are assembled. The filtered air and scrubbed surfaces are largely free of dust, and technicians must don caps, booties and bunny suits before entering. These precautions prevent as many microorganisms as possible from hitching a ride to another planet.

All of these creative work spaces are just part of JPL's success, however. "We have a unique cluster of labs and test facilities, but we also have a unique cluster of people," Conway said. "No matter how many facilities you have, if you don't have the right sorts of people with the right education and training, you won't have an innovative place."

— CLARA MOSKOWITZ



**MICRODEVICES
LABORATORY**



TESTS IN SPACE

NASA's Jet Propulsion Laboratory (JPL) is constantly exploring better ways to procure and test samples from alien environments millions of miles away. While a vial of discharge from a simulated ocean vent (above) will be manually tested for organic molecules and signs of life, former research intern Sherrisse Bryant (below) prepares a test of JPL's lab-on-a-chip. This technology automates sample testing by enabling users to perform analysis just by sending commands from a computer to the miniaturized lab on a chip.



NASA/JPL

Former JPL intern Payam Banazadeh (below) went from simply looking at the sky to helping send spacecraft there.



FACEBOOK.COM/NASAJPL

YOUNG MINDS, FRESH PERSPECTIVES

To youth, nothing seems impossible, said NASA's Charles Elachi when interviewed as part of The Henry Ford's OnInnovation oral history project. That sense of opportunity in young minds is one of the reasons the Jet Propulsion Laboratory (JPL) tries so hard to reach the next generation of scientists and engineers through internship programs and outreach activities. While students benefit from hands-on experience at one of the world's leading laboratories, their insights and ideas benefit JPL, too. "We're always worried about the vibrancy of the lab," said Adrian Ponce, supervisor of JPL's higher education internship program. "Having a strong pipeline really infuses the workforce with fresh perspectives."

About 1,000 college students interned at JPL in 2014. Another few dozen high school students participate in internships annually. Furthermore, JPL scientists routinely visit elementary and middle schools to plant the seeds of scientific thinking early. All in all, the laboratory's outreach efforts aim to ensure a steady stream of students pursuing Science, Technology, Engineering and Math (STEM) degrees — including some who will end up working alongside their internship mentors as JPL employees. "Quite naturally, a lot of the students become very interested in NASA and JPL, and some fraction of them become colleagues of ours," Ponce said. "But the primary mission is not to generate a pipeline, but to provide educational experiences for the students."

Interns at the lab participate directly in research. Recent trainees, for example, tested lasers intended for the Mars rover launching in 2020. They also helped prepare the James Webb Space Telescope for space and developed software for robotic solar system probes. Newcomer interns also take tours of JPL's varied facilities, attend a seminar series and participate in science and engineering career fairs. "When I first arrived here, not only was the magic of this place confirmed, but it was also exponentially skyrocketing by the minute, so much so that it made me want to try my hardest, work my best and literally shoot for the stars," wrote intern Andrew Crawford about his experiences.

Others have already affirmed their aim to join the JPL team eventually. "What inspired me the most was seeing the Curiosity Mars rover being built in the clean room," wrote summer intern William Lopez-Cordero. "I knew that one day I want to work at JPL. And interning at JPL is a first step to becoming a full-time employee here."

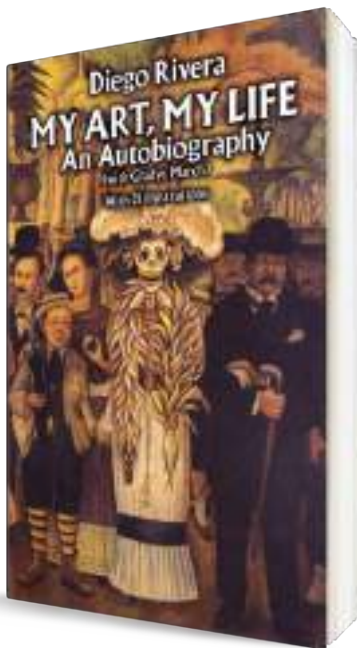
— CLARA MOSKOWITZ

ONLINE Follow NASA/JPL students and interns at [facebook.com/NASAJPLStudents](https://www.facebook.com/NASAJPLStudents) ►

ONLINE **LOOKING FOR LEARNING RESOURCES?** Subscribe to [THF OnLearning](https://www.thehenryford.org/enews) at [thehenryford.org/enews](https://www.thehenryford.org/enews) ►

My Art, My Life: An Autobiography by Diego Rivera with Gladys March

ELLICE ENGDahl, DIGITAL COLLECTIONS & CONTENT MANAGER, REVIEWS LEGENDARY MURALIST'S LIFE RECOLLECTION



Over a period of 13 years, Mexican artist Diego Rivera (1886–1957) was interviewed by American journalist Gladys March. She eventually transcribed and organized her notes into an autobiography pseudo-written in first person. March even writes in the foreword that she tried to remain as faithful as possible to Rivera's own style.

And what a style it is. All autobiographies must be taken with a grain of salt, but it seems safe to assume that much of what Rivera relates stretches, if it doesn't actually snap, the truth. March's foreword acknowledges this point. However, the world as Rivera relates it is a fascinating place, and this autobiography is as exciting as any novel. He discusses his tempestuous relationships with his four "wives" (a term he uses, though legally they might not all have qualified), including artist Frida Kahlo. There is also much discussion of his various artistic projects, including his disastrous relationship with Nelson Rockefeller, and Rockefeller's wholesale destruction of a commissioned mural after Rivera, a staunch Marxist, would

not paint over his portrait of Vladimir Lenin. (This chapter is titled "Holocaust in Rockefeller Center.")

Particularly interesting is Rivera's relationship with Detroit and the Ford family. Edsel Ford, then chairman of Detroit's Art Commission, arranged for Rivera to create the *Detroit Industry* frescoes in a courtyard at the Detroit Institute of Arts from 1932 to 1933. Rivera clearly appreciated Edsel Ford's support for these artworks, which were controversial at the time (as he was himself).

Rivera also relates a trip during his Detroit stay to Greenfield Village and Henry Ford Museum, which he found to be "organized not only with scientific clarity, but with impeccable, unpretentious good taste" and "a visual feast." Rivera even describes lunching with Henry Ford, whom he saw as "a true poet and artist, one of the greatest in the world."

Whether you are interested in art, politics, romance, industry, history or culture, there is something in *My Art, My Life* for you.

DIEGO RIVERA AND FRIDA KAHLO IN DETROIT

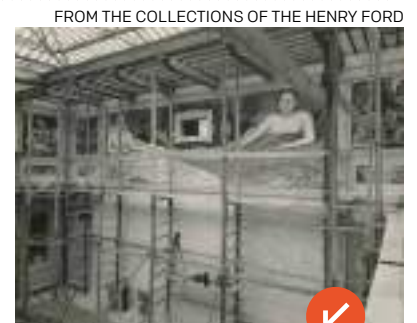
Visit the Detroit Institute of Arts March 15–July 12, 2015, for an insider's look at the time Diego Rivera spent in Detroit when creating his *Detroit Industry* murals. The *Diego Rivera and Frida Kahlo in Detroit* exhibit will also feature works Frida Kahlo, famed artist and Rivera's wife, finished while living in the city.



FROM LEFT, FRIEDA AND DIEGO RIVERA, FRIDA KAHLO, 1931, OIL ON CANVAS, SAN FRANCISCO MUSEUM OF MODERN ART, ALBERT M. BENDER COLLECTION, GIFT OF ALBERT M. BENDER; SOVIET HARVEST SCENE, DIEGO RIVERA, 1928, WATERCOLOR AND PENCIL ON PAPER, PRIVATE COLLECTION. © 2014 BANCO DE MÉXICO DIEGO RIVERA FRIDA KAHLO MUSEUMS TRUST, MEXICO, D.F. / ARTISTS RIGHTS SOCIETY (ARS), NEW YORK

ONLINE For more information on the upcoming Diego Rivera special exhibit in 2015, visit dia.org ▶

ONLINE The Henry Ford is collaborating with the Detroit Institute of Arts by digitizing and sharing photographs, letters and documents from our collections that relate to the *Detroit Industry* frescoes. Access these resources through our online portal at blog.thehenryford.org/diego-frida ▶



FROM THE COLLECTIONS OF THE HENRY FORD

What are we **reading** + **watching**?



Kristen Gallerneaux
Curator of Communication & Information Technology
The Henry Ford

Typewriter Art: A Modern Anthology

By Barrie Tullett

Typewriter Art introduces readers to the unruly history of an unassuming device. Typewriters ushered in a communication revolution, transformed women's labor and shortened pathways between the mind and page — capturing writers' thoughts in a tidy, universal format. But through 130 years of work reproduced, a hidden dimension of the typewriter is revealed, born of its misuse.

"Typewriter art" is a way of producing "drawings." By using letters and numbers as pictorial elements, images materialize from typographic soup.

Wherever technology is found, amateur operators find ways to rebel against its prescribed use. This book makes it clear that the typewriter belongs to creativity, indulging fans of the history of technology, design, literature and art alike.

Tom Varitek
Senior Manager, Program Operations
The Henry Ford

Abraham Lincoln: Vampire Hunter

By Seth Grahame-Smith

ALVH pits one of the greatest U.S. presidents and most beloved historic figures against glassy-fanged, blood-thirsty vampires. While this premise made me squeamish, what I found on the page was a fun but sometimes clunky mash-up of history and fiction.

Historians may cringe at the thought of a blurry bending of historic fact, but I found the basis (more than Grahame-Smith's delivery) captivating and even a rich advertisement for history as a pursuit.

At most, the ALVH reader is left with a desire to learn more about the actual people and places that are solicitously placed throughout this fiction. At the least, the reader is left feeling that the backdrop of 19th-century America is a slightly more engaging and accessible landscape than that depicted in schoolbooks.



"Historians may cringe at the thought of a blurry bending of historic fact, but I found the premise ... captivating and even a rich advertisement for history as a pursuit."

— **Tom Varitek**
on *Abraham Lincoln: Vampire Hunter*

DID YOU KNOW? / Stenographer **Flora Stacy** became a pioneer of typewriter art in 1898.

Lish Dorset
Social Media Manager
The Henry Ford

minted.com

When it comes to ordering photos, greeting cards or even business cards online, there are a lot of websites vying for your order. Luckily, minted.com stands out from the crowd thanks to a keen eye for design and selecting work from up-and-coming designers.

Minted.com works with independent artists to create special prints and designs for their art marketplaces on top of their readymade goods. From crowd-voted competitions for this year's minted-selected holiday card to gallery-sized art prints, minted goes one step further than the rest. It excels at collaborating with crafters and makers for original projects on its blog.

It's easy and enjoyable to lose yourself in its website.

GOOD READS

With creative leadership as our theme this issue, we figured it would be fitting to pull together a list of books about some of our country's most historic and charismatic leading ladies and gentlemen. Many of these materials are in The Henry Ford's archives. Benson Ford Research Center can help with access. Write to us at research.center@thehenryford.org.

Team of Rivals: The Political Genius of Abraham Lincoln by Doris Kearns Goodwin

Lincoln on Leadership: Executive Strategies for Tough Times by Donald T. Phillips

Giants: The Parallel Lives of Frederick Douglass & Abraham Lincoln by John Stauffer

Leadership the Eleanor Roosevelt Way by Robin Gerber

Women of Influence, Women of Vision by Helen S. Astin, Carole Leland

Franklin Delano Roosevelt: Champion of Freedom by Conrad Black

George Washington by James MacGregor Burns

Ronald Reagan: An American Hero by DK Publishing

Ask Not: The Inauguration of John F. Kennedy and the Speech That Changed America by Thurston Clarke

Ring Out Freedom! The Voice of Martin Luther King, Jr. and the Making of the Civil Rights Movement by Fredrik Sunnemark

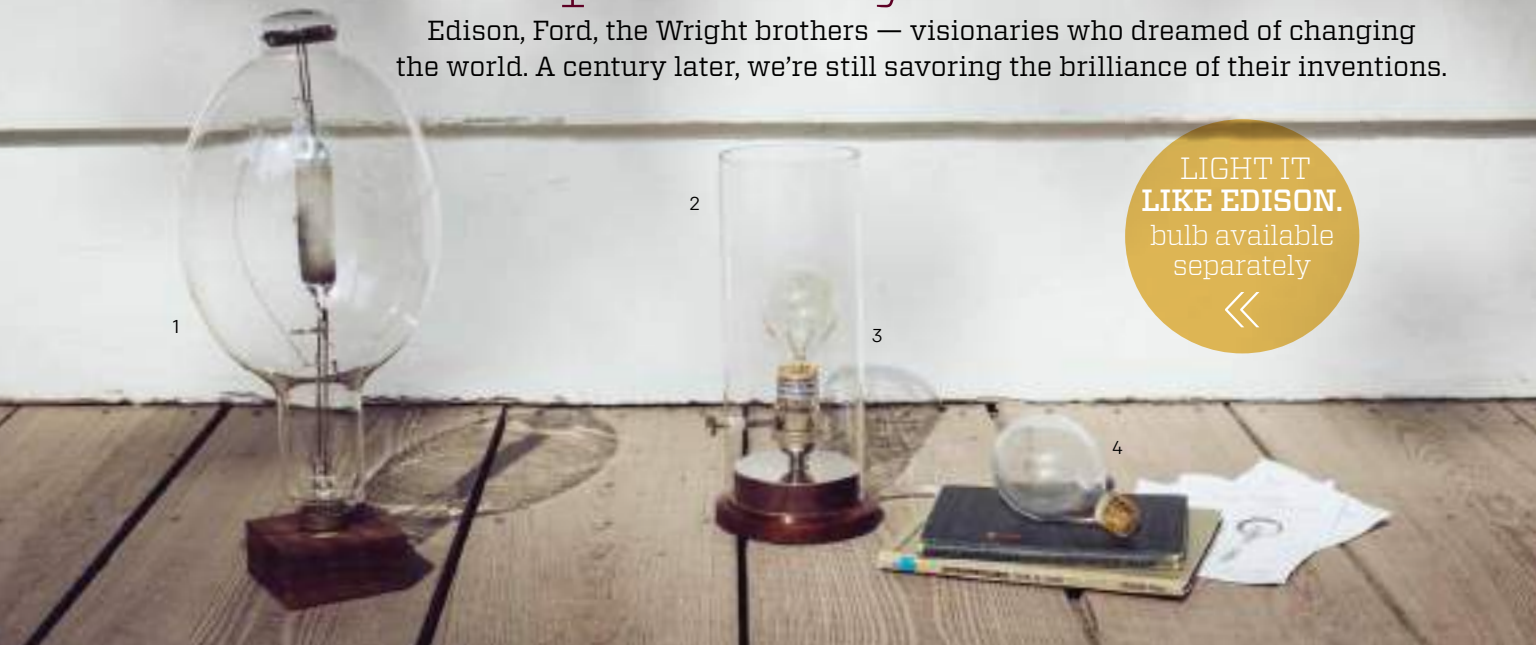
On the Shelf

Shop and Support *The Henry Ford*

PHOTOS BY ROY RITCHIE

inspired by innovators

Edison, Ford, the Wright brothers — visionaries who dreamed of changing the world. A century later, we're still savoring the brilliance of their inventions.



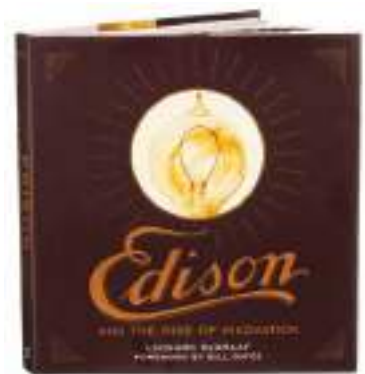
LIGHT IT
LIKE EDISON.
bulb available
separately



"ART OF SALVAGE" TABLE LAMP

Frederick Klass Jr.'s 30 years as an antiques dealer served him well as he began to repurpose artifacts for his "art of salvage" work. For this lamp, he converted 11 glass electrical insulators into shades. Brilliant. 10.5" w X 33.5" h X 16.5" d #7214972 Note: Lamp will deliver with black cord.

\$600 **MEMBER \$540**



5

1 NEW LARGE FACTORY BULB SCULPTURE

Repurposed as art, this massive 15-inch bulb is mounted on a base of wood reclaimed from a noncommercial site in upstate New York. Made in the USA.

7" w X 15.5" h #5336157
\$199.99 **MEMBER \$179.99**

2 INCANDESCENT TABLE LAMP

5" w X 10" h #4919566
\$149.99 **MEMBER \$134.99**

3 FILAMENT LIGHT BULB (SHOWN IN TABLE LAMP)

3.75" h X 2.375" d #5336164
\$12.99 **MEMBER \$11.69**

4 NEW RECYCLED GLASS LIGHT BULB PAPER-WEIGHT

Recycled glass/ designed in San Francisco. 3" w X 5" h X 3" d #7642874
\$34.99 **MEMBER \$31.49**

5 NEW EDISON AND THE RISE OF INNOVATION

Leonard DeGraaf's lavish book is filled with never-before-seen photos chronicling the remarkable career of the man whose many inventions thrust the world into the modern age. Foreword by Bill Gates. 272 pages, hardcover 8.9" w X 8.3" h X 1" d #7557611
\$29.95 **MEMBER \$26.96**



1
LIMITED EDITION
DETROIT'S
FASTEST
BICYCLE

1 NEW DETROIT BICYCLE COMPANY VINTAGE BICYCLE

Officially, it's called Detroit's Fastest Bicycle. Every detail is remarkable, from a frame gusseted with polished copper inserts to the copper-plated, laser-cut, 93-tooth front sprocket. The unique design blends contemporary technology with vintage track parts, including a prewar Schwinn track stem, Cinelli #14 bars, Campagnolo headset and seatpost, and a classic Brooks saddle. We love brilliant design and memorable engineering at The Henry Ford. And we think the folks at the Detroit Bicycle Company have achieved both with this exceptional cycling machine.

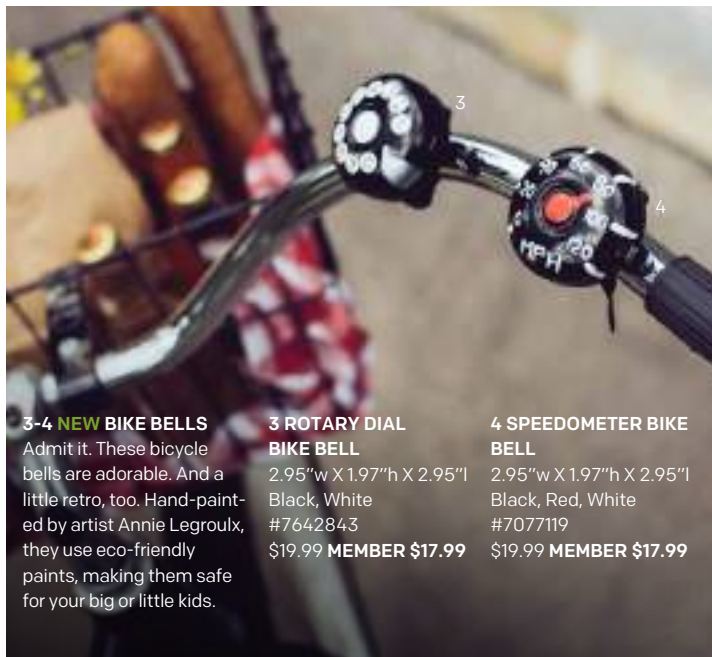
14" w X 40" h X 64" l frame
 Black, Copper #7669642
 \$6,500 **MEMBER \$5,850**

Hand-assembled at time of order. Additional shipping and handling charges may apply.

2 NEW JEFFERSON TOOL BAG

Consider this equally fabulous leather handlebar bag. Side flaps to keep the dust out, it's crafted from 2mm-thick leather and handmade in Detroit.

10" w X 5" h X 3" d Lager
 #7737075
 \$84.99 **MEMBER \$76.49**



3-4 NEW BIKE BELLS

Admit it. These bicycle bells are adorable. And a little retro, too. Hand-painted by artist Annie Legroulx, they use eco-friendly paints, making them safe for your big or little kids.

3 ROTARY DIAL BIKE BELL

2.95" w X 1.97" h X 2.95" l
 Black, White
 #7642843
 \$19.99 **MEMBER \$17.99**

4 SPEEDOMETER BIKE BELL

2.95" w X 1.97" h X 2.95" l
 Black, Red, White
 #7077119
 \$19.99 **MEMBER \$17.99**

NEW INDUSTRIAL NUMBERS

We'll let you in on a secret. The numbers on these gifts are significant to us at The Henry Ford. Here's a hint: The 1913 Ford assembly line ran 24 hours and paid workers \$5 a day for an 8-hour shift. You get the idea. Great products. Good history.

NEW LINEN NOTEBOOK

5" w X 7" h
 80 pages;
 perfect bound
 Black
 #7519800
 \$12.99
MEMBER \$11.69



NEW IPHONE 5S CASE

Fits iPhone 5S
 Black
 #7737273
 \$19.99
MEMBER \$17.99

NEW LATTE MUG

12oz Black
 #7521438
 \$12.99
MEMBER \$11.69



NEW JUNIORS 3/4 SLEEVE HOODIE

S-XXL Black #G7547698
 \$34.99 **MEMBER \$31.49**

recycled. repurposed. cool.

Recycling is just the first step. Add some imagination and ingenuity, and those once-expendable “things” can find a new and practical life. It’s smart, inspired and sustainable.



1-5 FORDITE

It takes vision to see beauty in things the rest of us might discard. Take Fordite, for example. The rainbow-colored “stones” are actually built-up automotive paint from factory paint booths. How unique.

1 INLAY EARRINGS

.5”w X 1.875”l #7128521
\$99.99 **MEMBER \$89.99**

2 INLAY PENDANT

.82”d #7128507
\$89.99 **MEMBER \$80.99**

3 CABOCHON PENDANT

.689”w X 1.125”l #7863002
\$179.99 **MEMBER \$161.99**

4 CABOCHON EARRINGS

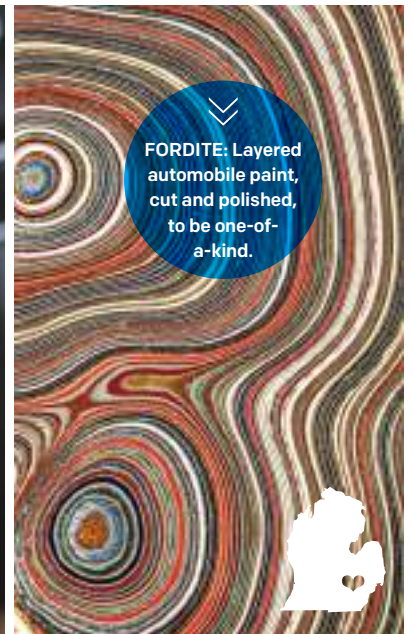
.563”w X 2”l #7865037
\$189.99 **MEMBER \$170.99**



See the 1965 Ford Mustang Serial Number One in Henry Ford Museum's *Driving America*, the world's premier automobile exhibition.

5 FORDITE INLAY CUFFLINKS

.875”w X .625”d #7128538
\$249.99 **MEMBER \$224.99**



FORDITE: Layered automobile paint, cut and polished, to be one-of-a-kind.



PHOTOS BY ROY RITCHIE

wood reimaged

Whether it's ash, birch or maple, there's something quite exhilarating about the crack of a wooden bat. Find that sweet spot!

NEW HANDCRAFTED BATS AND CARRIERS

Base ball is part of our national DNA. We like the modern game, but we have a special affection for the way it used to be played. So when Nick "Soapdish" Moroz and Adam "Stonewall" Goring, of Greenfield Village's Lah-De-Dahs base ball club, formed the Detroit Bat Company to make 1867-style bats, we couldn't resist. Hand-engraved, then gently rubbed with beeswax, linseed oil and walnut oil from our own Walnut Grove. Exceptional.

NEW HANDCRAFTED 1850-1860 MAPLE BASE BALL BAT

36", 36oz
Maple (Ash and Birch available in-store only)
#7827554
\$165 **MEMBER \$148.50**

NEW HANDCRAFTED 1880s BIRCH BASE BALL BAT

35", 35oz
Birch (Ash and Maple available in-store only)
#7827547
\$165 **MEMBER \$148.50**


NEW VINTAGE TICKING BASE BALL BAT CARRIER

Holds 36oz bat
Red, Blue #777777
\$24.99 **MEMBER \$22.49**

There's a difference between being in a community and being part of it.

Charter One is pleased to support The Henry Ford and its mission to inspire people to learn from America's traditions of ingenuity, resourcefulness and innovation to help shape a better future.

 Charter One[®]



Inside The Henry Ford

Here's your ultimate guide to the world's premier history destination.

The Henry Ford is 200 acres of innovation, 300 years of history and 26 million artifacts. Flip through the following pages to find out what's happening inside this mind-blowing cultural institution during the winter and spring.

Henry Ford Museum	54
Greenfield Village	56
Ford Rouge Factory Tour	58
IMAX® Theatre	60
Take It Forward	62
Acquisitions + Collections	64
2015 Events	66

Eye of an Architect

John Margolies' discerning view of roadside America

In

the mid-1970s, John Margolies set out on what would become a decades-long road trip as he crisscrossed the United States to document diners, gas stations, drive-in theaters,

shop fronts, commercial signage and other evidence of America's roadside and Main Street entrepreneurialism.

In the mid-1980s, Margolies' first published photo collection, *The End of the Road*, caught the attention of a young British undergraduate finishing his studies of medieval art and architecture. That student was Marc Greuther, now senior director, historical resources and chief curator at The Henry Ford.

"I had never heard of Margolies, but I thought the book was magical, and it changed my perspective," said Greuther. "I was a big fan of American road movies, and his photos seemed to inhabit the same universe. You just don't see this sort of architecture in Britain. The fact that he photographed it — and the way he photographed it — both legitimized and celebrated it. And I realized it was more interesting to me than studying cathedrals."

Fast-forward 20 years. Greuther, now on The Henry Ford's staff, is in Henry Ford Museum and spots Margolies exploring the exhibit floor with a tour group. By this time, some of the architect's celebrated photos were part of the Library of Congress' collections.

"I introduced myself and told him it was because of him that I was here; in large part my eagerness to work here was rooted in the work he'd done," Greuther said. "He told me that not all of his collection was going to the Library of Congress, and that's how it started."

From that happenstance conversation, The Henry Ford ended up purchasing 1,500

transparencies, and Margolies also donated materials. "We bought his library as well," added Greuther.

This spring, Henry Ford Museum will showcase its Margolies collection in a temporary exhibit called *Roadside America*. Greuther calls it part art exhibit, part installation and part retrospective. "This collection documents a form of architecture and design and advertising that's very homespun," he said. "There's humor, there's quirkiness. There's an emotional resonance that ties to fundamental aspects of American culture. We're acknowledging that and celebrating it."

Margolies may not have had formal training in photography. Nonetheless, he had a discerning eye for rich examples of vernacular architecture, which he preferred to shoot in clear, morning light. Many of the sites he chose already were faded and on the brink of collapse.

"We live in an era of Instagram and Flickr and most every cellphone is a decent camera. Margolies was documenting and sharing when it just wasn't that easy," Greuther said.

Remember, it was pre-Internet, before Google maps and Web searches. "What he was doing was a sort of detective work, fueled by his passion," added Greuther. "He was willing to look at architecture that other people didn't take seriously."

Much of what Margolies documented was made possible by the automobile, of course, and his emphasis on the sites' blend of resourcefulness, ingenuity and entrepreneurialism makes his body of work a fine fit for The Henry Ford. "We use historical materials to look at our present and inspire people for the future," Greuther said. "He was willing to look at architecture and details that other people didn't take seriously and at times didn't even notice."

ROADSIDE AMERICA

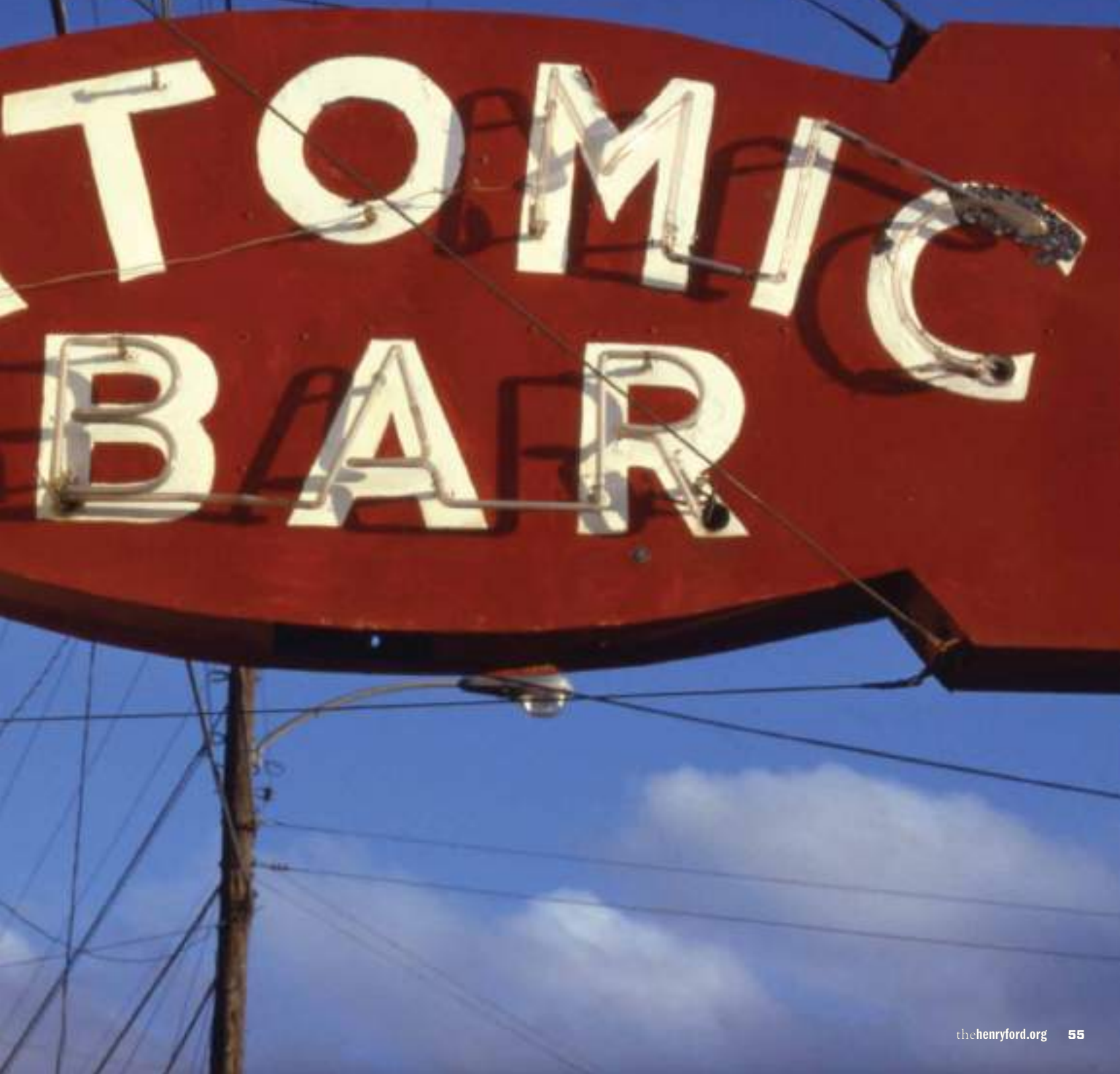
A temporary exhibit in Henry Ford Museum's flexible exhibit space, *Roadside America* is dedicated to John Margolies' body of work. It will include his photos, his library, a map installation of the United States created from felt pennants Margolies collected, a running slide show and dozens of offbeat "Do Not Disturb" signs he picked up at hotels during his travels.

Dates: May 9-September 7, 2015

Where: Henry Ford Museum

Free with museum admission

◀ Atomic Bar Sign, El Paso, Texas, 1979



Lincoln the Lawyer

President-to-be creates public persona in Logan County Courthouse

In

the 1840s, Abraham Lincoln was a young lawyer traveling the western frontier, trying cases in small-town courthouses.

"They were mundane civil matters — whose pig was it, etc.," said James Johnson, The Henry Ford's senior manager of venue events and Greenfield Village programs. "But he was forging relationships that would certainly lead him to being more of a public figure. The law, even then, was a training ground for politicians."

In the 1840s, court cases were local entertainment. They happened only a couple of times each year, as lawyers rode the circuit to different communities. Cases could range from property disputes to criminal matters. "It was a spectacle, and people would pack it in," Johnson said. "Telegraphy was not quite there yet; the railroad was just coming together. People were starved for news and entertainment, so court days were a big thing."

During his law career, Lincoln tried cases in the Logan County Courthouse, which now sits in Greenfield Village. Henry Ford obtained the courthouse in 1929. It is one of the few remaining structures related to Lincoln's early law career.

"The courthouse fits in with the theme of the community [Greenfield Village]," Johnson said. "It does double-duty — it's about Lincoln, yes, but it tells the story of legal history in the United States."

Lincoln ran for public office several times during his legal career — often losing. But as he traveled the Eighth Judicial Circuit, which covered 11,000 square miles, he mingled with the public, laying the groundwork for his eventual presidential campaign.

Lincoln, even in his early years, "clearly had the aspiration and the drive to better himself," Johnson said. "His beginnings were so humble. He had to really struggle to get educated. He certainly wasn't being invited to do that — it was all on him to move himself forward."

The Logan County Courthouse has a walnut corner cabinet built by Lincoln and his father. Most recently, The Henry Ford obtained the courthouse's original bar. Plans are being discussed on its possible reconstruction. "The courthouse and the other items being here in this community are an amazing thing," said Johnson, who anticipates a great outpouring of interest in Lincoln's life as the 150th anniversary of his assassination is marked this spring. "We want to share them and give members of the public a way to come and pay their respects."


ONLINE For more information, hours and pricing, visit thehenryford.org/village ▶

DID YOU KNOW? /

Recently, descendants of friends of the Lincoln family came to Greenfield Village claiming the corner cabinet that sits in the Logan County Courthouse could only be the one built by a young Abe Lincoln and his dad if it had a mouse hole covered with a tin patch on its interior right side. Guess what? It does.



BILL BOWEN



◀ Between 1840 and 1847, Abraham Lincoln practiced law in the Logan County Courthouse, which is now reconstructed in Greenfield Village. Most of his cases involved disagreements over land, contracts and debts.

DID YOU KNOW? / Abraham Lincoln served as a circuit-riding lawyer until his election as president in 1860. As a riding lawyer, he also served in the Illinois State Legislature (1834-1842) and the U.S. Congress (1847-49).

Truck of the Future

2015 F-150's new cutting-edge production drives revamp of factory tour

The

Ford F-150 has been thoroughly reimagined — and with it, the factory that produces it and the tour that lets the public explore it.

Last year, the Ford Rouge Factory Tour went quiet as it underwent an overhaul in preparation for the launch of the new 2015 Ford F-150. This, however, wasn't your typical model-year change-over. For 2015, Ford Motor Company made a bold move, deciding to build its top-selling truck with an aluminum body rather than steel.

This change, said Cynthia Jones, Ford Rouge Factory Tour general manager, is hard to overstate in terms of its significance for Ford and automotive manufacturing as a whole. "It really changes everything. It's a historical first to have a full aluminum body built on such a scale. We were pressed with how to tell the story in a way that brings this level of innovation front and center."

The tour features two fully updated film experiences, one of which showcases the truck's new production processes. Because aluminum assembly is quite different from that of steel, the massive Rouge plant required major updates. Entire factory walls were temporarily removed for loading of new robots. More than 3,000 construction workers labored around the clock just in the plant's stamping and body shops to make necessary production changes.

According to Jones, the revamped tour not only allows people to see the finished process

at the plant, but it connects visitors to the incredible level of research and technology that went into the aluminum-bodied truck's new design. She also appreciates how the tour gives context to how the development and production of the 2015 F-150 encompasses Ford Motor Company's long history of innovation. "From The Henry Ford's perspective, this is evidence of the continuing industrial revolution," she said.

The tour's Manufacturing Innovation Theater now features two of the robots used in the new truck's assembly as well as a three-quarters-scale F-150 rising out of the floor. The eight-minute film outlines the truck's diverse geographical material and parts sourcing. 3-D mapping and X-ray-like projection techniques bring different areas of the scaled truck to life. Special effects built into the floor combine with the 3-D mapping for an awe-inspiring show.

After viewing the film, visitors can take the walking tour of the assembly line. "When you go out to the floor, you're really going to have a better understanding of how much new innovation is integrated," said Christian Lachel, vice president and executive creative director at BRC Imagination Arts, the company helping create the new tour experience.

A second phase of the redevelopment, including hands-on exhibits, is underway, said Jones, as the team looks at additional ways to let visitors actually feel the difference aluminum makes in a vehicle's design. "The new truck has 700 pounds of weight savings. We want people to know what that feels like," she said.

In the Ford Truck Design Studio, a full-scale clay model of the 2015 F-150 is hand-sculpted with assistance from a robotic lathe machine, symbolizing the cooperative relationship between people and machines in 21st-century manufacturing. ▶

DID YOU KNOW? /

The Ford F-150 is Ford's top-selling vehicle and has been the top-selling vehicle in the U.S. for more than three decades. ▶

ONLINE For more information, hours and pricing, visit thehenryford.org/rouge ▶

ONLINE INTO AUTOS? Subscribe to **THF OnWheels** at thehenryford.org/enews ▶



◀ A concept rendering of the 360-degree Manufacturing Innovation Theater experience depicts how factory tour guests will be immersed in the Rouge plant's all-new vehicle production processes.



“We’re inviting guests to be thoughtful about **how vehicle manufacturing is changing — and where our world is going** — while they’re here.”

— Cynthia Jones

School of the Big Screen

The Henry Ford lets teachers decide what's on its IMAX marquee for the day

In

2012, The Henry Ford decided to give teachers a rare opportunity. With a new program called Teacher's Choice @ IMAX, educators were invited to not only pick an IMAX film of their choice

but decide what day and time The Henry Ford would play it for their students.

The thought was that teachers should be able to tap The Henry Ford's extensive library of films that help bring science and history to life when it best fit with their lesson plans. "We understand that teachers have a very limited amount of time in their day and in their curriculum schedule," said Amy Louise Bartlett, The Henry Ford's senior director of guest operations and IMAX. "We wanted to make it as easy as possible for them to pick a topic that ties with their curriculum or is just a nice reward for the kids."

Among the program's other big advantages, added Bartlett, is that it allows everyone to view classic IMAX titles that otherwise can't be seen. The popular *Lewis & Clark: Great Journey West*, for example, is the program's biggest draw.

"It's an excellent film, but it's older," Bartlett said of the Lewis and Clark film. "It's such an exciting, take-you-there story; there's nothing else like it. When we put it on the schedule for teachers, regular guests can also come in and watch the film, which can't be seen anywhere else."

Indeed, the films picked by teachers are also open to the general public. The Henry Ford's IMAX Theatre seats 400, so most school groups take only a portion of the seats. Once a film is chosen and seats are reserved for the class (there is no additional cost to schools for booking a film beyond the standard \$8 per-person ticket for school groups), the film is then added to the public viewing schedule and one and all can purchase a ticket.

In addition to the Lewis and Clark IMAX classic, other top teacher choices include *EVEREST*, *TITANICA* and *Flight of the Butterflies*. New for this year, educators can opt for the winter session's feature film, *Humpback Whales* (opens February 13) or *Island of Lemurs 3D*. Narrated by actor Morgan Freeman, the currently running 40-minute *Island of Lemurs* takes viewers on a journey to Madagascar, where the cat-like primates arrived millions of years ago.

ONLINE For more information, hours and pricing, visit thehenryford.org/imax ▶

ONLINE To view each available film's educational supplements, visit thehenryford.org/imax/rental.aspx, click on a film's title and scroll down to "Curriculum Connections" ▶





POPULAR FILMS

The Henry Ford's Teacher's Choice @ IMAX has a comprehensive list of classic and new films available to school groups. The list below is the latest, but it's best to check the website in case new films are added.
thehenryford.org/imax/rental.aspx

- Island of Lemurs 3D
- The Polar Express 3D (seasonal)
- JERUSALEM
- D-DAY 3D: Normandy 1944
- PENGUINS 3D
- Flight of the Butterflies 3D
- Rocky Mountain Express
- Lewis & Clark: Great Journey West
- TITANICA
- NASCAR 3D
- The Magic of Flight
- EVEREST
- Humpback Whales (opens February 13)

Most films offered through Teacher's Choice @ IMAX come with educator guides. If not, The Henry Ford's education team has developed corresponding Michigan grade-level content. A 30-person minimum is required to open and book a time slot. Cost is \$8 per person.

Take It Forward

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ANTICIPATORY LEADERSHIP

There's no place like dome



FROM THE COLLECTIONS OF THE HENRY FORD

◀ FORGET FOUR WALLS

Buckminster Fuller has a different vision for suburbia, thinking environmentally sensitive, technologically innovative design can save the world.

DID YOU KNOW? / The word "Dymaxion" was coined by combining parts of three of Bucky's favorite words: DY (dynamic), MAX (maximum) and ION (tension).

SERVANT LEADERSHIP

For we the people

LAWYER AT LARGE ▶

A young Abe Lincoln is on the frontier, fighting for justice for the common man. Word spreads, Abe is someone fair, diligent and true.

Logan County Courthouse, Greenfield Village

DID YOU KNOW? / Lincoln was a self-taught lawyer and was given his license to practice in 1836 at age 25.



▲ Logan County Courthouse

CO-LEADERSHIP

More heads are better than one

RIGHT- & LEFT-BRAINED ▶

One is more outgoing, contemplative and controlled. The other is impulsive, super curious and painfully shy. When the Wright brothers put their brains together, however, it's inventive genius.



FROM THE COLLECTIONS OF THE HENRY FORD

◀ DID YOU KNOW? / Wilbur and Orville Wright often consulted their mother, Susan, whenever they needed mechanical assistance or advice.

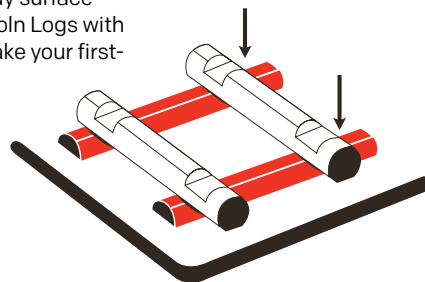
LET'S BUILD WITH LINCOLN LOGS

Some say the classic toy is named for famous American architect Frank Lloyd Wright (his son John invented Lincoln Logs nearly a century ago). Others claim Abe Lincoln is the inspiration. Whatever the case, building a small-scale cabin with these mini notched logs is a lot of creative fun.



ONLINE Purchase Abe Lincoln's Log Cabin Play Set in the Village Store or visit giftshop.thehenryford.org ▶

1 Pick a flat, sturdy surface and select Lincoln Logs with a flat side to make your first-row foundation.



▼ Endesa World Fab Condenser, project by Margen-Lab (Daniel Ibañez and Rodrigo Rubio) for the FAB 10 Symposium in Barcelona 2014.

STRUCTURES IN THE ROUND ▶

Fuller envisions the geodesic dome and then Dymaxion House, which can enclose so much space with so little material. Sadly, we resist; housing's evolution is slowest of all.

Henry Ford Museum



BILL BOWEN

VISION IN WAITING ▶

Fuller aficionados remain optimistic, knowing design scientists must anticipate for the long term and great invention has to sometimes wait for us to catch up.



◀ LOBBYIST AT LARGE

As president, Lincoln champions the end of slavery. Hard to imagine anyone securing such consensus today on an issue with such great divide.

The 13th Amendment to the Constitution, Henry Ford Museum



◀ HERO AT LARGE

Lincoln's martyrdom propels him to icon status. Ever since, people continue to laud, criticize, deconstruct and commemorate the ordinary man who did extraordinary things.

Abraham Lincoln Life Mask, The Collections of The Henry Ford



CHEMISTRY & COLLABORATION ▶

Henry Ford charges young chemist Robert Boyer to lead a team of students in agri-experiments. Say hello to the world's first industrial app for soybeans.

Soybean Car, The Collections of The Henry Ford



A CAR & A CREW ▶

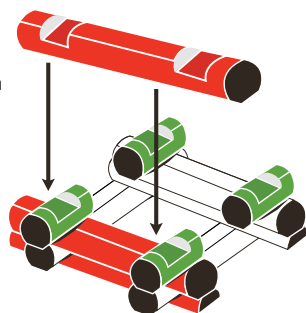
Designers, engineers, manufacturing specialists and marketing peeps decide to work together on Ford's next car. The 1986 Ford Taurus is so popular, every car company scrambles to copy its aerodynamic jelly bean-like design.

Henry Ford Museum

ALL IMAGES FROM THE COLLECTIONS OF THE HENRY FORD UNLESS NOTED

2

Continue to build the cabin walls, one row at a time. Use the small log pieces to leave window or door openings.



3

Use the premade roofs, windows and other optional pieces included in your set.



ONLINE

LIKE GOOD DESIGN?

Subscribe to **THF OnDesign** at thehenryford.org/enews ▶

A Simple Symbol

A spinning wheel embodies mutual respect between two leaders

One

One day after Japan's attack on Pearl Harbor in 1941, Indian nationalist leader Mohandas Karamchand Gandhi receives a letter. The simple note has traveled thousands of miles from Dearborn,

Michigan. Its author is Ford Motor Company's leader, Henry Ford. It reads:

"I want to take this opportunity of sending you a message ... to tell you how deeply I admire your life and message. You are one of the greatest men the world has ever known."

Ford appreciated Gandhi as a nonviolent champion of the principles of simplicity, economic independence and peace. His letter took four-and-half months to reach Gandhi, but its sentiment, especially after such a violent act of war, immediately spurred the pre-eminent forerunner of the Indian independence movement to respond.

Recollected by T. A. Raman, the London editor of the United Press of India who hand-delivered the letter to Gandhi:

"Gandhi said that he was deeply touched by the message and asked me to convey his regards to Mr. Ford. I asked him whether I may take back his message in the shape of the simple machine with which Gandhi's name is associated, the spinning wheel. He agreed instantly."

The spinning wheel had taken on a symbolic persona, representing Gandhi's peaceful push for India's economic independence from Britain and the self-sufficiency of its people. Escorted by Raman, the wheel Gandhi wished to give to Henry Ford had to journey 12,000 miles through submarine-infested waters before it reached the U.S. It was presented to Henry Ford in Henry Ford Museum in 1942 and has been a part of The Henry Ford's collections ever since.

DID YOU KNOW? /

In 1931, the spinning wheel became the primary symbol on the flag of the Provisional Government of Free India.

ONLINE

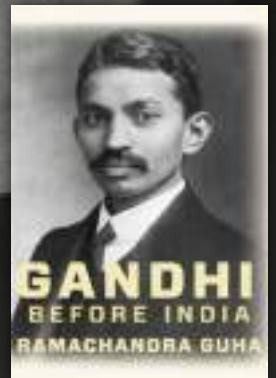
For more information about the collections of The Henry Ford, visit collections.thehenryford.org ▶



◀ Henry Ford (right) accepts a portable spinning wheel from T.A. Raman in 1942. Mahatma Gandhi sent Ford the wheel in response to a letter and as a token of mutual respect.



READ: *Gandhi Before India* by Ramachandra Guha for an interesting portrait of Gandhi not often found in history books. See if you can discover relevant strands similar to civil rights leader Rosa Parks' story.



DID YOU KNOW? / Gandhi autographed the spinning wheel he gave to Henry Ford in Hindi and English. After signing it, Gandhi said, "So, this goes from one sensible man to another."

2015 Events

Celebrate.
Play.
Imagine.



ENGINES EXPOSED

JANUARY 10-MARCH 15, 2015
HENRY FORD MUSEUM

FROM THE COLLECTIONS OF THE HENRY FORD

Come on. Look under our hoods. The Henry Ford is bringing back Engines Exposed for a limited time this winter. Visitors to Henry Ford Museum can take up-close views of more than 40 vehicle engines that helped power the automotive revolution. Basically, if you think an engine header is a work of art, this rare event is for you.

Also expect special engine-focused presentations in the *Driving America* exhibit's theater, linked themes during Tinker. Hack. Invent. Saturdays (see opposite page), talks over a Model T engine cutaway and Henry Ford's kitchen sink engine, plus daily runnings of the massive 1859 Corliss steam engine that's on the museum floor.

ONLINE visit thehenryford.org/engines ▶



TINKER. HACK. INVENT. SATURDAYS.

EVERY SATURDAY, EVERY MONTH.

10 A.M.-3 P.M.

HENRY FORD MUSEUM

GARY MALERBA

Makers, builders, tinkerers and doers of all ages, know-how and backgrounds are invited to congregate in Henry Ford Museum every Saturday for some good ol' DIY delight. It's a chance to hear firsthand how makers do what they do and why — and then take a shot at making something yourself. The activity board and guest list for these Saturdays change. Sometimes you might hang

with a “mad” chemist, other times you and a musician might tinker with writing a tune. Check The Henry Ford’s website for monthly program themes throughout this winter and spring. Spoiler alert: With Engines Exposed (see opposite page), it’s safe to assume engines, combustion and how to turn matter into energy will be on the docket.

Presented by



ONLINE visit thehenryford.org/events/thiSaturdays.aspx ▶

2015 Events

YEAR-ROUND

Macy's 2nd Mondays Children's Program

(10 a.m.-noon)
January 12, February 9, March 9, April 13, November 9, December 14
Henry Ford Museum

May 11, June 8, July 13, August 10, September 14, October 12
Greenfield Village

Target Family Days

January 19, April 15, September 7
Henry Ford Museum
Presented by Target

Tinker. Hack. Invent. Saturdays

Every Saturday
Henry Ford Museum

JANUARY

Engines Exposed

January 10-March 15
Henry Ford Museum

MLK Day**

January 19
Henry Ford Museum

FEBRUARY

Engines Exposed

Running through March 15
Henry Ford Museum

Celebrate Black History

February 4-8, 11-15, 18-22, 25-28 and March 1
Henry Ford Museum

MARCH

Engines Exposed

Running through March 15
Henry Ford Museum

APRIL

Lincoln's Legacy: An Evening with Doris Kearns Goodwin*

April 13 (Anderson Theater, Henry Ford Museum)

Local Roots Evening Dining*

Exclusive Eagle Tavern Menu Preview
Eagle Tavern, Greenfield Village
April 14 (

Lincoln Remembered**

April 15
Henry Ford Museum

Day Out With Thomas™™*

April 25-26
Greenfield Village

Railroader's Breakfast*

April 25-26
Greenfield Village

MAY

Outdoor Living Lab Tour*

May 1-October 10
Ford Rouge Factory Tour

Day Out With Thomas™™*

May 2-3 and 9-10
Greenfield Village

Railroader's Breakfast*

May 2-3 and 9-10
Greenfield Village

Roadside America: From the Lens of John Margolies Preview* (

May 7
Henry Ford Museum

Roadside America: From the Lens of John Margolies

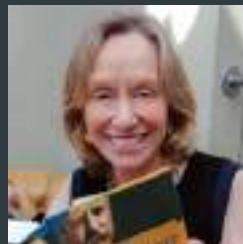
May 9-September 7
Henry Ford Museum

Mother's Day Brunch*

May 10
Lovett Hall, The Henry Ford

Civil War Remembrance

May 23-25 (Open Saturday 'til 9 p.m.) (Greenfield Village)



ERIC CHARBONNEAU, COURTESY OF DREAMWORKS STUDIOS

Lincoln's Legacy: An Evening with Doris Kearns Goodwin*

Henry Ford Museum
Anderson Theater
April 13 (

Join The Henry Ford for a lively conversation with famed author of *Team of Rivals: The Political Genius of Abraham Lincoln*, Doris Kearns Goodwin. Expect Goodwin to elaborate on Lincoln's mastery of men and how it shaped the most significant presidency in the nation's history.

*Additional fee and/or advance reservation required

Tickets for Lincoln's Legacy: An Evening with Doris Kearns Goodwin on sale **February 26**

ONLINE

For more information, visit thehenryford.org/lincoln150 or call 313.982.6001 ▶



Lincoln Remembered**

Henry Ford Museum
April 15

Museum admission will be waived this day in memory of the 150th anniversary of President Lincoln's assassination. Experience a rare moment on the museum floor as the chair in which Lincoln was sitting when he was shot will be removed from its glass enclosure and placed on a special stage for a close-up look.

**Museum fee waived courtesy of Target

JUNE

Roadside America: From the Lens of John Margolies

Running through September 7
Henry Ford Museum

Local Roots Evening Dining*

Spring Wine Tasting and Dinner
June 5 (Michigan Cafe, Henry Ford Museum)

Member Appreciation Days

June 5-7
The Henry Ford

Historic Base Ball Games

June 13-14, 20-21 and 27-28
Greenfield Village
Historic Base Ball in Greenfield Village is made possible through the generous support of Cynthia and Edsel B. Ford II.

National Get Outdoors Day

June 13
Greenfield Village

Motor Muster

June 20-21 (Open Saturday 'til 9 p.m.) (Greenfield Village)



MICHELLE ANDONIAN

Summer Discovery Camp*

June 22-26, July 6-10, July 13-17, July 20-24, July 27-31 and August 3-7
The Henry Ford



MICHELLE ANDONIAN

▶ Battle reenactments and period music are all part of Civil War Remembrance.

JULY

Roadside America: From the Lens of John Margolies

Running through September 7
Henry Ford Museum

Salute to America*

July 1-4 (Greenfield Village

Historic Base Ball Games

July 4-5, 11-12, 18-19 and 25-26
Greenfield Village



Ragtime Street Fair

July 11-12
(Open Saturday 'til 9 p.m.) (Greenfield Village

Maker Faire® Detroit*

July 25-26
(Open Saturday and Sunday 'til 6 p.m.) (The Henry Ford

AUGUST

Roadside America: From the Lens of John Margolies

Running through September 7
Henry Ford Museum

Historic Base Ball Games

August 1-2, 8-9, 15-16 and 22-23
Greenfield Village



◀ Supersonic Car Wash Sign, Billings, Montana, 1980, *Roadside America: From the Lens of John Margolies* exhibit, May 9-September 7 in Henry Ford Museum.

Local Roots Evening Dining*

Summer Blues, Brews and Local Roots BBQ
August 14 (Pavilion, Greenfield Village

World Tournament of Historic Base Ball®

August 8-9
Greenfield Village

SEPTEMBER

Roadside America: From the Lens of John Margolies

Running through September 7
Henry Ford Museum

Target Family Day**

September 7
Henry Ford Museum

65th Annual Old Car Festival

September 12-13
(Open Saturday 'til 9 p.m.) (Greenfield Village

Fall Flavor Weekend

September 26-27
Greenfield Village

Farmers Market

September 26
Greenfield Village



BILL BOWEN

OCTOBER

Fall Flavor Weekend

October 3-4
Greenfield Village

Farmers Market

October 3
Greenfield Village

Hallowe'en in Greenfield Village*

October 9-11, 16-18 and 23-25 (Greenfield Village

Hallowe'en in Greenfield Village Dinner Package*

October 9-10, 16-17 and 23-24 (Greenfield Village

NOVEMBER

Local Roots Evening Dining*

Fall Cooking with The Henry Ford
November 6 (Lovett Hall, The Henry Ford

Member Appreciation Days

November 6-8
The Henry Ford

Members 22nd Annual Holiday Lighting Ceremony*

November 23 (Henry Ford Museum

Holidays in Henry Ford Museum

November 27, 2015- January 3, 2016
Henry Ford Museum

DECEMBER

Holidays in Henry Ford Museum

Running through January 3, 2016
Henry Ford Museum

Holiday Nights in Greenfield Village*

Select dates in December (Greenfield Village

Holiday Nights Supper with Santa Package at A Taste of History®*

Select dates in December (Greenfield Village

Holiday Nights in Greenfield Village Dinner Package at Eagle Tavern*

Select dates in December (Greenfield Village



ROY RITCHIE

b Get an inside look at the experiences of The Henry Ford at blog.thehenryford.org

BEST VALUE!

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*Additional fee and/or advance reservation required

**Museum fee waived courtesy of Target

(Special evening hours during these events

All programs and dates are subject to change.

BEFORE YOU VISIT

It's a good idea to give a quick call or check online to confirm dates, times and locations for all events.

visit thehenryford.org

call 313.982.6001



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Stay, Explore + Savor

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You don't have to wonder where you might stay while you explore The Henry Ford. All the info you need about available lodging options, from hotel names and locations to drive times from attractions to descriptions of the many amenities offered, is right here. We've also tossed in a few extras about where you can — and should — grab a bite around town. Making your travel plans will be as easy as pie.

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OR 800.835.5237.

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comfortinntaylor.com**

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buffet and free high-speed Internet. Suites available. Rooms include refrigerator, coffee, coffeemaker and in-room safe. For your convenience, we're located right off I-94 and also offer a courtesy shuttle to and from The Henry Ford.

COMFORT SUITES - SOUTHGATE



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734.287.9200
comfordsuitessouthgate.com**

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spread out within all suites that include microwaves and refrigerators. Hotel features also include indoor swimming pool, deluxe continental breakfast and free high-speed Internet.

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of-the-art fitness facility, indoor and outdoor pools and the signature Sweet Dreams beds. Consistently a Top 10-ranked hotel for overall guest satisfaction.

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a fresh and clean Hampton bed, complimentary hot breakfast and WiFi, refrigerator/microwave and indoor pool. Offering complimentary shuttle to The Henry Ford and local venues.

Accommodations at a Glance

HOTEL	LOCATION AREA	DRIVE TIME*	SLEEPING ROOMS	POOL	PETS	MEETING ROOMS	MEETING SPACE (sq. ft.)	AD ON PAGE	
FULL SERVICE	Adoba Hotel Dearborn/Detroit	Dearborn	5	773	Indoor	•	30+	62,000	78
	Best Western Greenfield Inn	Dearborn (I-94 corridor)	10	209	Indoor	•	4	1,047	75
	Crowne Plaza Detroit Downtown Riverfront	Downtown Detroit	15	367	Indoor		11	10,000	77
	DoubleTree by Hilton Detroit-Dearborn	Dearborn	10	347	Indoor		16	12,000	78
	Holiday Inn Southgate Banquet & Conference Center	Downriver (I-75 corridor)	15	160	Indoor		8	9,000	81
	The Henry, an Autograph Collection by Marriott	Dearborn	5	323	Indoor	• \$	14	26,000	79
	Westin Hotel Detroit/Southfield	South Oakland County	15	338	Indoor	•	25	24,732	82
HISTORIC	The Dearborn Inn, a Marriott Hotel	Dearborn	3	229	Outdoor		17	17,000	74
	The Westin Book Cadillac	Downtown Detroit	15	453	Indoor/Spa		13	26,000	80
LIMITED SERVICE	Comfort Inn & Suites - Dearborn	Dearborn	4	116	Indoor		1	250	76
	Comfort Inn & Suites - Taylor	Dearborn (I-94 corridor)	10	78	Indoor		1 (15 people)		75
	Comfort Suites - Southgate	Downriver (I-75 corridor)	15	78	Indoor		1 (50 people)		74
	Country Inn & Suites - Dearborn	Dearborn	7	100	Indoor	•	1 (55 people)		76
	Courtyard by Marriott - Detroit Dearborn	Dearborn	10	147	Indoor		2	1,274	79
	Hampton Inn-Detroit/Southgate	Downriver (I-75 corridor)	15	114	Indoor		5	1,340	77
	Hawthorn Suites by Wyndham	Detroit	10	128	Outdoor	• \$	0		82
	Holiday Inn Express & Suites - Allen Park	Dearborn (I-94 corridor)	10	163	Indoor		2 (15 people each)		77
	Marriott TownePlace Suites - Livonia	I-275 corridor	20	94	Outdoor	• \$	0		80
	Quality Inn & Suites DTW Metro Airport	Airport (I-94)	15	116			1 (75 people)		77
	Red Roof Inn - Detroit-Dearborn	Dearborn	7	111		•	0		81
Red Roof Inn - Detroit Southwest-Taylor	Downriver (I-75 corridor)	15	111		•	0		82	
BED & BREAKFAST	Bishop-Brighton Bed & Breakfast	Downriver	20	3			1	350	82
	York House Bed and Breakfast	Dearborn	10	3			0		82
CAMPING	Camp Dearborn	NW Oakland County	45	191	Outdoor		0		82
	Detroit Greenfield Campground/RV Park	I-94 corridor	20	212	On lake	•	Outdoor pavilion	600	82

*Drive time in minutes to The Henry Ford.

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