

# the Henry Ford

**MAGAZINE**

JANUARY-MAY 2014

®

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**Make history.**



What happens  
when designers  
of subwoofers  
and ceramic tile  
lean on **similar  
philosophies of  
form, function  
and utility?**

PAGE  
**28**

WOMEN IN ROCK 'N' ROLL  
THOUGHTS FROM A  
BATTERY MAKER  
WHAT IS A FAB LAB?

◀ Mieko Kusano, Sonos



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THIS ISSUE: **GROUNDBREAKING  
WOMEN PAST AND PRESENT**

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**WANT MORE?** THIS ISSUE OF THE HENRY FORD MAGAZINE IS AVAILABLE IN JANUARY 2014 ON ITUNES AND GOOGLE PLAY FOR IPAD AND ANDROID TABLETS. ▶

## FEATURES

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A poet, a songwriter and an R&B singer. Ladies who shaped rock music.



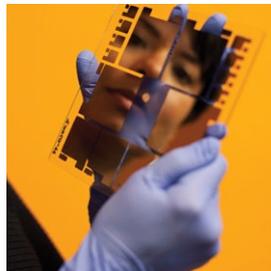
COURTESY OF ROCK AND ROLL HALL OF FAME AND MUSEUM

### 28 PURE & SIMPLE

What do we learn when two designers come clean about their truths for good design?

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An entrepreneur and battery maker says irrational optimism and a dose of derring-do inspire great innovation.



BILL BOWEN

### 59 WOMEN WHO ROCK: VISION, PASSION, POWER EXHIBITION

rolls into Dearborn May 17



COURTESY OF ROCK AND ROLL HALL OF FAME AND MUSEUM

### ON THE COVER

Mieko Kusano, of the Santa Barbara-based consumer electronics manufacturer Sonos, is always careful to design products with a personality that is timeless, domestic and approachable. "At Sonos, our design mission is to passionately craft the best listening experience at home," she said. Cover photo by Dave Lauridsen



DAVE LAURIDSEN



## 28

► Catherine Bailey, who owns Heath Ceramics with her husband, Robin Petravac, has given new life to the California pottery company founded in 1948 by renowned ceramist Edith Heath. Bailey continues to use Heath's traditional techniques, combining them with more modern lines, manufacturing practices and marketing.

## Behind the Scenes

Who We Are and What We Do

# Gain perspective. Get inspired. Make history.

### THE HENRY FORD: A NATIONAL TREASURE AND CULTURAL RESOURCE

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 which 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](http://thehenryford.org).

**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.

### OUR CONTRIBUTORS



#### BILL BOWEN

is a partner at Octane Design, and when he's not coaching hockey or drumming, he's either behind the camera or dreaming up the next new project for the studio. He enjoys meeting the people he photographs as much as taking their picture. His work has been featured in *Sky* magazine (Delta's in-flight publication), *Visit Detroit* and, of course, *The Henry Ford Magazine*.

**OnInnovation, Page 34**



#### DAVE LAURIDSEN

is a Los Angeles-based photographer who spends his time off checking fourth-grade math homework and sixth-grade science projects. In his office, there's usually 5 gallons of beer fermenting in the corner. Dave has recently shot for *Sunset*, *Money*, *Architectural Digest* and *Southwest Airlines*.

**Pure & Simple, Page 28**



#### DR. LAUREN ONKEY

is vice president of education and public programs at the Rock and Roll Hall of Fame and Museum in Cleveland, Ohio. She has interviewed artists and songwriters, has been privileged to walk the *Women Who Rock* exhibit with performers such as rockabilly star Wanda Jackson and the great soul and girl group singer Darlene Love, and is creating an educational curriculum meant to inspire girls and boys of all ages.

**Female Roles in Rock 'n' Roll, Page 22**



#### JULIE WOLFSON

is a freelance writer living in Los Angeles and covering travel, lifestyle, art, pop culture and cuisine. Most days you will find her out and about in California or around the world tracking down stories about talented innovators doing amazing things or walking her rescue mutt Gulliver.

**Pure & Simple, Page 28**



#### JOSH MALERMAN

is the author of *Bird Box*, set for publication by HarperCollins in early 2014. He's also the singer/songwriter of Detroit band The High Strung, whose song *The Luck You Got* is the theme tune for the Showtime TV series *Shameless*.

**Inside The Henry Ford, Page 45**

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# Letter from the President

## Casual Thoughts and Serious Correspondence

At

The Henry Ford, we tell the stories of ordinary individuals who embraced their uniqueness, realized their potential, changed the status quo and made a mark on the world. These

stories, of people like Rosa Parks, Thomas Edison and Henry Ford, are what inspire and motivate me daily — stories of personal challenge, risk-taking and perseverance, no matter the consequences.

In this issue of *The Henry Ford Magazine*, we focus on stories of people — all women — working today in varying industries, from music and ceramics to next-generation battery engineering, who are breaking down barriers and creating new possibilities.

We explore the continuing evolution of female role models in television, and we

look at how job opportunities have changed for women over decades. We examine gender and the workplace, asking how more women can become engaged in science, math, engineering and industries such as aviation and automotive.

As you read through this issue, think about your own story. Find ways to share your moments of ordinary and extraordinary, failure and success, redemption and discovery, with the people around you. When you do, you'll experience a bit of what we do every day at The Henry Ford. In sharing your own stories of the past, you are bound to inspire ideas and actions in others that will help shape the future.

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MICHELLE ANDONIAN

The Henry Ford President Patricia E. Mooradian (right) interacts with students of Henry Ford Academy.



## Ideas in Action

A Sampling of Cool Inventions and Crazy Notions

# DESIGN FOR SOCIAL GOOD

Can design create positive social impact? Women have played and are playing a catalytic role in communities with projects, products and ideas that are evoking societal change.

### TRASH TO TREASURE

Deepa Gangwani had the MBA from Stanford and the high-profile job, but when she looked at her country's poverty all around, she wanted more meaning in her life. So she engineered a bioenergy system in India that turns food scraps and agri waste into ethanol and animal feed. The system can help generate more stable sources of energy and provide the many trash collectors in India (mostly women) with a more dignified line of work and way of life.

[taoglobal.org](http://taoglobal.org)

### PEDALING WITH PURPOSE

MIT alum Jodie Wu knew that most small-holder farmers worldwide only have a hoe for plowing and their hands for pulling weeds. Electricity is scarce.



COURTESY OF JODIE WU

She created a design to fill a need — a bicycle add-on so that when you pedal your bike, it can also remove corn kernels from the husk. And that was just the start of it. Now she is shifting gears from just selling bike accessories to selling a portfolio of products designed to improve village life all over the world.

[gcstz.com](http://gcstz.com)

### COAT OF MANY CAUSES

New Frontier Award recipient and design student Veronika Scott was spending a lot of time doing research in homeless shelters when she came up with an idea for a coat that converts in seconds into a sleeping bag. The cozy coats quickly took off and are now being given to homeless people all across the country. The bigger innovation: Scott is creating jobs for women in shelters — transforming them into trained seamstresses with special purpose.

[empowermentplan.org](http://empowermentplan.org)



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ERIKA GEORGE/  
THE EMPOWERMENT PLAN

### SIT ON IT

When LA design student Ji A You was working in a water-poor area outside Lima, Peru, she watched as families spent up to six hours per day — three to five times a week — washing clothes. Soon after, she and fellow student Alex Cabunoc built the GiraDora, a human-powered washer/spin dryer you can sit on and pump a foot pedal to agitate, clean, rinse and dry your duds. It may look like a humdrum plastic drum, but the GiraDora is ergonomic and efficient, can increase health by wiping out all that back-breaking scrubbing and can help generate income in off-the-grid areas and developing countries.

[idsa.org/giradora-safe-agua-washer-and-spin-dryer-0](http://idsa.org/giradora-safe-agua-washer-and-spin-dryer-0)

### JUST ONE LOOK



WIKIMEDIA COMMONS

It's 1914, World War I and Nobel Prize-winning scientist and mother Marie Curie knows if military surgeons could just see where the bullet lodged, the shrapnel scattered or the bone broke on the battlefield — if X-rays were on the front line — soldiers would be saved. She convinces the French government to support her cause, gets body shops to convert vehicles into mobile medical trucks, begs manufacturers to donate equipment, learns how to drive, trains her daughter as a radiologist, and the two make their way into war zones in the "petite Curie" and start taking pictures that will change people's lives.



STEVE SWINTEK



DETROIT HISTORICAL SOCIETY

FROM THE COLLECTIONS OF THE HENRY FORD

# CAN OBJECTS TALK?

Objects have a tendency to develop lives and stories of their own, and I love figuring out the various ways they “speak” to us, the networks and worlds they form, and the variety of angles they can be looked at from. Part of the challenge of studying the history of media, information and communication is in knowing how to draw scattered data back together again, and how to weave a story out of it, to make it accessible and interesting — all the while rooting it to the object in question.

The microlevel details and histories of objects can be coaxed into connecting to big ideas. For example, the same “never leak” gaskets used in the modest Star-Rite electric toaster were also used in the engine of the Spirit of St. Louis airplane. So

**DID YOU KNOW? /**  
 Jeannette Piccard’s husband, Jean, was used as inspiration when naming Capt. Jean-Luc Picard of *Star Trek*.

here, gaskets migrate out of the kitchen to become silent players that made the first transatlantic flight possible. This, in turn, connects not only to the development of aero technology but also to the desire to conquer space and time.

It makes me think of a shortwave radio receiver in our collection that was custom-built by William Duckwitz for ground communication during a balloon flight. The knobs, wires and tubes are typical of a DIY ethos. The flight itself took off from Ford Airport in 1934 and rose nearly 11 miles into the stratosphere. Who was manning the gondola below the hydrogen-filled balloon? Jeannette Piccard, a streetwise woman with impressive credentials. She was the first woman to be licensed as a balloon pilot and became the first American woman to enter the stratosphere and, technically speaking, space. Piccard once said: “When you fly a balloon, you don’t file a flight plan; you go where the wind goes. You feel like part of the air. You almost feel like part of eternity, and you just float along.”

The objects in my curatorial care are essentially a huge collection of “black boxes”— a concept that means the more seamless and successful a technology is, the more mystifying and opaque its inner functions become to the everyday user. And so, another exciting task is to figure out a way to reveal the invisible networks among the collections, to allow patrons to see communications and IT devices and think beyond their sleek shells (or messy tubes and wires) and understand how they relate to ideas, stories, invention and to themselves — as users.

► Jeannette Piccard (right), her husband, Jean (center), researcher Dr. William Francis Gary Swann (in hatch) and Henry Ford discuss their historic stratosphere flight from Ford Airport. The Henry Ford has a number of artifacts from the flight (far left) in its collection.

**KRISTEN GALLERNEAUX**

is the curator of communications and information technology at The Henry Ford. She is also working toward a Ph.D. in Art Practice at the University of California at San Diego and writes about the histories of architecture, media, craft and design. On the weekends, you can find her playing the part of “object nerd,” wandering swap meets and back rooms in search of evocative “stuff.” In the spirit of knowing a little bit about a lot of things, she would like to recommend Steven Connor’s *Paraphernalia: The Curious Lives of Magical Things*.

## Turn it **ON**

Explore *The Henry Ford's Destination*  
for Enthusiasts of All Kinds

THE  
OnWheels

# Mustang Is 50

THF hits the road with two iconic American cars as part of its first national OnWheels Tour



► Pilot Stanley Tucker was the accidental first owner of Mustang Serial Number One.

**ONLINE** See more images like this online at [collections.thehenryford.org](http://collections.thehenryford.org) ►

On April 17, 1964, something monumental happened in America. Ford dealerships across the country were stockpiling 22,000 orders for the same vehicle. People were flocking to showrooms, entering into heated bidding wars over one car. Some even insisted on sleeping the night on dealership premises, inside their new dream car, until checks cleared and keys were exchanged.

It was the day the Ford Mustang officially went on sale, and immediately it seemed an American icon was born. It was the first of the American pony cars. It was symbolic of the free-spirited, “want to stand out” nature of a country and its people. It changed the way we thought about cars and who should be driving them — not just Dad, but everyone. Nearly 420,000 were sold that first year, and the Mustang has been in continuous production ever since. Today, more than 9.2 million Mustangs have been produced and sold.

**WANT MORE?**  
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[thehenryford.org/enews](http://thehenryford.org/enews) ►



### 1965 MUSTANG SERIAL NUMBER ONE STATS

**Engine:** V-8, overhead valves, 260 cubic inches

**Transmission:** 3-speed automatic

**Horsepower:** 164 @ 4400 rpm

**Weight:** 2,740 pounds

**Pounds per horsepower:** 16.7

# The 1965 Mustang Serial **Number One**

When Stanley Tucker, a Canadian airline pilot, saw a sleek new Mustang convertible at George Parsons Ford in St. Johns, Newfoundland, in 1964, he knew he had to have it. Unfortunately, the car was not meant to be sold to customers. It was one of 180 early examples of the car that was meant for internal testing and promotional purposes. It was never supposed to leave the showroom.

Didn't matter. Tucker was convincing and the dealership caved. Tucker drove away in Ford Mustang Serial Number 5F08F100001.

A couple weeks later, Ford Motor Company realized the significance of a certain sale in Newfoundland. George Parsons Ford had inadvertently

sold Mustang Serial Number One to a customer. Ford officials quickly reached out to Tucker looking to strike a deal. But Tucker was having so much fun with his new car, he declined to sell it back.

It took Ford two years to change Tucker's mind. In March 1966, Tucker finally brought Mustang Serial Number One back to Dearborn in exchange for the keys to the

one millionth Mustang produced, another convertible.

Soon after the trade, Ford donated Mustang Serial Number One to The Henry Ford, and it has been on the floor of Henry Ford Museum since 1984, traveling for special events every so often. Operable, the car will run by its own power during Motor Muster in Greenfield Village, June 14-15, 2014.



#### **Did You Know?/**

The original inspiration for the Mustang name was the P-51 Mustang fighter aircraft, but Ford Motor Company didn't want its sports car associated with an airplane. It was soon decided that the image of an untamed, spirited wild Mustang was a more-than-adequate backup.



## THE ONWHEELS TOUR

In 2014, The Henry Ford is kicking off a celebratory nod to 50 years of Mustang with the THF OnWheels Tour.

#### **JANUARY 10-26, 2014**

North American International Auto Show  
Detroit, Michigan  
**CAR:** Mustang Serial Number One and Mustang I Roadster Concept Car

#### **APRIL 17-20, 2014**

Charlotte Motor Speedway  
Concord, North Carolina  
**CAR:** Mustang I Roadster Concept Car

#### **APRIL 17-20, 2014**

Las Vegas Motor Speedway  
Las Vegas, Nevada  
**CAR:** Mustang Serial Number One

#### **JUNE 14-15, 2014**

Motor Muster in Greenfield Village  
Dearborn, Michigan  
**CAR:** Mustang Serial Number One and Mustang I Roadster Concept Car

#### **AUGUST 17, 2014**

Pebble Beach Concours d'Elegance  
Pebble Beach, California  
**CAR:** Mustang Serial Number One

Visit [thehenryford.org/onwheelstour](http://thehenryford.org/onwheelstour) for tour updates, Mustang specs and more.

Sign up for THF OnWheels and receive invitations to private OnWheels subscriber meet-ups at the Charlotte and Vegas events. Subscribe at [thehenryford.org/enews](http://thehenryford.org/enews). It's free!

## Turn it **ON**

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THE  
OnWheels

# The 1962 Ford Mustang I Roadster Concept Car

Are you looking at this Mustang concept and thinking it doesn't really look anything like the Ford Mustangs you're familiar with? That's because the 1962 Ford Mustang I Roadster isn't part of the iconic production pony car's story. Well, Matt Anderson, curator of transportation at The Henry Ford, said you might be able to get away with calling the Mustang I a cousin, thanks to a few small features echoed in the iconic production model we all know and love. Take a close look at the roadster's

logo, parking lights and the C-shaped side-mounted vent on the back fender. Intentional similarities or the world's greatest coincidences?

The 1962 Mustang I was a completely separate project from the 1965 Mustang, with different design objectives. "Ford never had any intention of putting this car into production," said Anderson. Ford's intention for the vehicle was to make people think of Ford as an exciting, forward-thinking

company. And it worked. The car was as fast as it looked, and when Ford debuted it on the racetrack at the 1962 United States Grand Prix in Watkins Glen, New York (driven by road-racing champ Dan Gurney), the people and the press loved it. Every major car magazine clamored to feature the car.

The Henry Ford acquired the 1962 roadster in 1974, long

after its show and promotional days were done. Ford designers had hid it in a trailer so it wouldn't go to the scrap heap like most concept cars did back then. The car was restored for exhibition in 1980. Now, it's ready to travel the country, on display for the THF OnWheels Tour.



## Channel Your Inner **Enthusiast**

Enter the conversation. Make new friends. Subscribe to one, two or all of The Henry Ford's online enthusiast channels and get a deeper look at artifacts, entire collections, events, projects and people associated with The Henry Ford.

Sign up and become a part of THF OnWheels, OnDesign, OnLiving, OnMaking, OnLearning and OnInnovation for FREE today at [thehenryford.org/enews](http://thehenryford.org/enews).

Here's a peek at what's running hot on THF's other enthusiast channels and websites in Winter 2014.

THE  
OnDesign

for enthusiasts of design

### New Acquisitions

Learn about the recent addition of the Eames World's Fair Kiosk to The Henry Ford collection on Page 56 of this issue, but discover what other intriguing and unlikely Eames-designed rare finds came with the kiosk. [thehenryford.org/onDesign](http://thehenryford.org/onDesign)

## 1962 MUSTANG I ROADSTER CONCEPT CAR STATS

**Engine:** 60-degree V-4, 91 cubic inches

**Transmission:** 4-speed manual

**Horsepower:** 109 @ 6400 rpm

**Weight:** 1,544 pounds

**Pounds per horsepower:** 14.2



# THE ONWHEELS MUSTANG #1 FANTASY SWEEPSTAKES

**JANUARY 10-SEPTEMBER  
30, 2014**

Get up close and under the hoods with the original Mustang I Roadster concept car and Mustang Serial Number One at The Henry Ford, home of the world's premier automotive exhibit. One grand-prize winner will receive a VIP experience for four — including a professional photo shoot with the Mustangs, behind-the-scenes tour with expert curators and a preview of the 2015 North American International Auto Show. A package valued at more than \$18,000 (round-trip air travel and hotel included).

One hundred first-prize winners will receive a *Driving America* book, the visually stunning tribute to all things automotive in The Henry Ford's exhibit of the same name.

Enter for your chance to win at [thehenryford.org/sweepstakes](http://thehenryford.org/sweepstakes).

### WANT MORE?

**GO ONLINE/** Find other news related to 50 years of the Ford Mustang at [mustang50thbirthdaycelebration.com](http://mustang50thbirthdaycelebration.com) ▶

**WATCH/** Ford Motor Company has launched Mustang Countdown, an online video series <http://www.youtube.com/user/FordMustang> ▶

NO PURCHASE NECESSARY. A PURCHASE WILL NOT INCREASE YOUR CHANCES OF WINNING. LEGAL RESIDENTS OF THE 50 UNITED STATES (including D.C., excluding New York and Florida) 18 YEARS AND OLDER. VOID WHERE PROHIBITED. Sweepstakes ends 9/30/2014. For Official Rules, prize descriptions and odds disclosure, visit <http://thehenryford.org/sweepstakes>. Sponsor: The Henry Ford, 20900 Oakwood Blvd., Dearborn, MI 48124.

ALL IMAGES FROM THE COLLECTIONS OF THE HENRY FORD

### THE OnLiving

for home, holidays and entertaining

#### Recipe Refresh

This cooking series is sure to give you ideas for everything from Super Bowl fare and Valentine's Day sweet treats to hearty Easter main meals. Recipes from the historic kitchens of The Henry Ford.

[thehenryford.org/onLiving](http://thehenryford.org/onLiving)

### THE OnMaking

for people who like to tinker, hack and make

#### School Project

What happens when a group of Rhode Island technical-college students decides to do a little exercise in reverse engineering and builds a reproduction of Henry Ford's Quadricycle? [thehenryford.org/onMaking](http://thehenryford.org/onMaking)

### THE OnLearning

for lifelong learning and teaching

#### National Endowment for the Humanities, Landmarks Workshop

Learn how THF is investing federal funds toward empowering educators to learn and teach about America's Industrial Revolution. [thehenryford.org/onLearning](http://thehenryford.org/onLearning)

### THE OnInnovation

learn how to think and act like an innovator

#### The Henry Ford's Innovation Education Incubator (IEI)

The Henry Ford's educational movement, IEI, is poised to make a nationwide impact, especially after it was accepted as a commitment to action at the Clinton Global Initiative America last year. [oninnovation.com](http://oninnovation.com)

## A Word or Two

Defining People, Places, Pastimes



JEFFERY CROSS



### Vessel

(VES-UHL) N.

It's not a boat, it's not an airship. It's a plate, a teacup, a wireless speaker of perfect simple design.

**PAGE 29**

### Derring-do

(DER-ING-DEW) N.

Lots of smarts mixed with a dab of recklessness. You need this if you're gonna walk a tightrope across the Grand Canyon, fall in love or invent the world's next-generation solid-state battery that will power millions of automobiles across the globe.

**PAGE 39**



### Consumption

(KUHNSUHMP-SHUHN) N.

Imagine Pac-Man in his maze, furiously eating the yellow pac-dots. What would happen if humans rethought how they mindlessly devour resources, like food, fuel and info, in their communities?

**PAGE 14**

### Glow

(GLOH) V.

Commonly associated with what Edison and his light bulb gave to a room, but it's also what you get when you're satisfied and full of pride in yourself for accomplishing something cool.

**PAGE 48**

### Bubblegum

(BUB-EHL-GUM) N.

A genre of music that popped on the scene decades ago. With sugary sweet lyrics and tunes that stick — in your head, silly, not on your seat.

**PAGE 25**

### Carnival

(KAHR-NUH-VUHL) N.

Traveling amusements that just make people happy. What better way to make computers seem not so scary way, way back in the 1960s than to show off what they can do in a merrymaking space.

**PAGE 56**



FROM THE COLLECTIONS OF THE HENRY FORD

#### MUSIC TO OUR EARS

**The Phonograph.** Thomas Edison changed everything when he created the phonograph and made the first audio recording on a cylinder in 1877. Music moved from concert halls and churches to living rooms.

**Radio.** Music is free to the masses, and tens of thousands of people get their first doses of blues, country and jazz in the 1920s.

**The 45 RPM.** This one cements rock 'n' roll in our history and changes the way popular music is consumed in the 1950s. Every popular artist releases big hits this way, and we eat it up.

**The Walkman.** Music on the go. Forget the living room or your bedroom, even the car. Just attach your tunes to you wherever you are. Music as a personal experience.

**The MP3 player.** The rise of the digital download. It's mobile, yes, but also unlimited and, most of all, it's free. Plus, you can share with anyone, anywhere.



# Innovation Nation

Personal stories AND perspectives  
from today's forward thinkers

Much of this issue of *The Henry Ford Magazine* is dedicated to groundbreaking women and their stories. How did they discover their best selves? Use their inner strength, talents and passion to find their purpose, whether it be for creating legendary music, next-generation car batteries, classic pottery or superior speaker sound?

We decided to ask some of today's visionaries to take this discussion a little further in this issue's Innovation Nation. We asked them to share their thoughts about the inherent need to uncover and pursue our best self. How throughout history we continue to redefine ourselves, shatter societal barriers and stereotypes, and create unlikely connections that lead to great innovation.

Technology **14**  
Transportation **15**  
Design **16**  
Food **17**  
Social Innovation **18-19**  
Manufacturing **20**

→ Technology



# Create Anything, Anywhere

Many people are innocently, and some unsuspectingly, participating in a great democratizing transformation. Using available technologies, we are redefining our personal time, job relationships, consumption patterns and relationship to the environment. This is creating different pathways for participating in our society and economy while also preserving our personal opportunities to thrive and become our best selves.

Massachusetts Institute of Technology's Neil Gershenfeld poses a deep question to all of us: "How will we live, learn, work and play when anyone can make anything, anywhere?"

In community shops we call Fab Labs, we have built utility items that support basic needs, including furniture, 150-square-foot structures and control systems for energy and food production. Community members across generations are raising the bar, building items with a huge impact on expenses that we normally toil many hours a month to support: housing near 1,000 square feet that supports zero utility bills, concentrated solar power (CSP) energy harvesting systems and community-scale food production using aquaponics and permaculture techniques. These are built with digital fabrication tools and permaculture design techniques available to everyone in the community.



BILL BOWEN

Community-level production can be very effective in allowing fundamental lifestyle changes for people who are looking to live within limits, but not poorly, and who want to have time for high quality-of-life experiences. In the words of professor, philosopher and practitioner Frithjof Bergmann, to live within a community "that would foster the development of impressive, splendid, admirable human beings." These personal, triple-bottom-line outcomes (people, planet, profit) are impactful now. As sociologist and trend watcher Juliet B. Schor said, "Work and spend less, create and connect more," in turn leading to "ecological benefits — emit and degrade less — and human ones — enjoy and thrive more."

What's important to note is that this is all being done with technology that is rapidly increasing in both power and accessibility, to the extent that what we use today will be considered laughably crude within a decade or two. What is happening today is powerful, but the impact of this advancing technology is only embryonic at present.

The opportunity for us to genuinely participate in this future is, amazingly, available to all right now. The relevant skills and perspectives can and are being

learned today. Those with a true understanding — who are immersed in that life — will create this future. And the profound question posed by Gershenfeld that I stated earlier can be, and more importantly needs to be, answered with deep contributions from all of us. ●

### WHAT'S THE FAB LAB?

Created by a group of dedicated professionals at MIT, Fab Lab is a place where ideas become reality. Anyone with any level of experience can create anything. And through the online Fab Lab community, you can then share those ideas and collaborate with people half a world away. <http://fab.cba.mit.edu/about/labs/>

### WANT MORE?

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[incite-focus.org](http://incite-focus.org) ▶  
[fablabhouse.com](http://fablabhouse.com) ▶

READ/ *Fab: The Coming Revolution on Your Desktop — from Personal Computers to Personal Fabrication*, Neil Gershenfeld, Basic Books, 2005 ▶



**BLAIR EVANS** is founder and director of Incite Focus, a program that uses digital fabrication, agroecology and appropriate technology to empower communities. His project work and centers of community production can be found in the U.S., South Africa and Ethiopia, among other locations. He is a guru with the Fab Academy, a permaculture practitioner and instructor, and a superintendent of a group of charter schools using these technologies in place-based education.



# Talk Careers in Air & Autos

When most people think about what it means to work in the transportation industry, the depth and breadth of career paths, opportunities to make a significant impact on communities and the environment, and the unlimited potential of contributions one can make to a thriving economy are not what come to mind. What's more — and where the industry has a lot of work to do — women's participation in this most impactful sector, particularly in leadership roles, is much lower than it should be.



The good news is that awareness about the opportunities in transportation for women is on an upswing. Leaders everywhere — from the White House to private-sector construction conglomerates to university educators — are beginning to put programs into place that will help attract, retain and advance women in all modes of transportation and across all disciplines.

It begins in middle school. Fostering an interest in STEM studies (science, technology, engineering and math) is where it starts. Preparing now for what our country's infrastructure will look like and the roles that will need to be filled is our best chance for sustained growth and innovation, and, thankfully, STEM initiatives are happening everywhere.

But the emphasis on gender diversity specifically in the transportation work

force and attracting young women now is more important than ever. Giving our daughters a glimpse into the world of transportation and its extraordinary opportunities is a forward-thinking strategy that will help leverage 50 percent of the talent and human capital needed to meet the demands of the industry coming our way in the next 10-20 years.

The ICAO (International Civil Aviation Organization) has predicted that in the next 20 years, airlines will need to add 25,000 more aircraft to the existing fleet of 17,000. To extrapolate that out, by 2026 there will need to be 480,000 technicians and engineers to build and maintain them. And this is just a sliver of the professions and skill sets that exist in the transportation sector, many of which may not even exist yet technologically.

Participation of women in leadership roles also has to increase in the industry. A recent Goldman Sachs study concluded that a reduction in barriers to female participation in the work force would increase America's GDP by nine percent.

And the boardroom should not be overlooked, either. Many studies over the past 10 years have revealed that a high number of women in top-level positions increases a company's financial success. In 2007, Catalyst found that companies

with more women on their board of directors outperformed their competitors that didn't have gender-diverse boards on three different levels. They reported:

- 53 percent higher return on equity
- 42 percent higher return on sales
- 63 percent higher return on invested capital

Building awareness about the bottom line is a surefire way to begin removing any barriers to entry into the boardroom for women, but it's critical that qualified women are there to walk through the door, too. Programs like WTS (Women's Transportation Seminar) International's Transportation YOU are designed to inspire middle school girls with hands-on projects, behind-the-scenes tours, mentorships, scholarships and other programs about satisfying careers in what is collectively known as the transportation industry. But Transportation YOU is just one example. Programs like this can be found in after-school activities, math clubs, Girl Scouts, Boys & Girls Clubs of America and more.

I encourage everyone to talk about what the transportation industry has to offer a young girl for her future academic studies and professional career. A mind with a penchant for STEM-related topics can be nurtured now and help bolster the economy — and her own success. ●

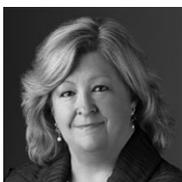
## WANT MORE?

GO ONLINE/  
[transportationyou.org](http://transportationyou.org) ▶  
[wtsinternational.org](http://wtsinternational.org) ▶

READ/ *Flying High: Pioneer Women in Aviation*, Charles R. Mitchell, Arcadia, 2002 ▶

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Subscribe to [THF OnLearning](http://THF OnLearning) at  
[thehenryford.org/enews](http://thehenryford.org/enews) ▶



**MARCIA FERRANTO** is president and CEO of WTS International. Headquartered in Washington, D.C., WTS and WTS Foundation seek to attract, retain and advance women in every mode of transportation.

→ Design



# Bring Something to the Table

It's no secret that we ladies matter when it comes to car purchases. Eighty percent of vehicle purchase decisions are made by women, a big number that tells me the girls have a big say when it comes to deciding what car has the right look, features and price tag for their household. But what about before that car hits the showroom floor? Are women having the same say in the automotive design studio?

It's a question I have asked myself. And it's a question I have explored with women in the automotive industry. And what I've found is, not only do women bring something to the table when it comes to the design of the cars we are driving today, but they all do it with a sense of intrepidity, intellect, curiosity and tenacity.

I began talking to industry women for a graduate journalism project. Right away, I was impressed by what they had to say about their own careers and the encouraging advice they had for other females thinking about a future in the automotive industry. "You just can't give up." "I always do my own thing and don't really worry about what other people think." "You have to be constantly learning." "The moment you limit yourself, you stop growing." Comments like these are what I kept hearing.

One of these women was an engineer who designed collision avoidance technology. Another was passionate about vehicle acoustics and sound quality. One was a race car driver who designed a drum-to-disc brake system as a teenager for a 1965 Ford Mustang. Another a manufacturing executive.



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Overall, in every conversation, it was each woman's tenacity that stuck out to me most. They're minorities in the workplace but not bothered by it. They're not intimidated by an engineering or design challenge — they're inspired by it. And when it comes to future career possibilities, these women want nothing more than to bring more female brains into the mix. "You never really think about the person behind the car," one designer told me, "but there's lots of passion here." •

► Kara Gordon, development engineer noise and vibration performance for General Motors, sets up the Aachen Head to test noise levels in the Chevrolet Malibu.

**WANT MORE?**

GO ONLINE/  
[laurenfix.com](http://laurenfix.com) ►  
[oninnovation.org](http://oninnovation.org) ►

RESEARCH/ **Helene Rother**. She was the first woman to work as an automotive designer for General Motors in 1943. ►

WATCH/ Kara Gordon and other female engineers talk about their work in an online video. [http://www.youtube.com/watch?v=Siwxfmra\\_IM](http://www.youtube.com/watch?v=Siwxfmra_IM) ►



**ALEXA C. KURZIUS** is a science journalist, ad copy writer and author of humorous greeting cards. Her work has appeared in *Double X Science*, an online science magazine for women, and *The Hairpin*. She has always been interested in writing about cars and is currently working on a book proposal on the rise of women in the auto industry.



# Build a Healthy Relationship with Food

The Centers for Disease Control and Prevention calls the obesity epidemic one of the country's most serious health problems, citing a 100 percent increase in adult obesity rates since 1980. It saddens me deeply that 78 million U.S. adults are considered obese now. That is equal to the populations of Florida, New York, Texas, Oregon and Michigan. And projections indicate we will add 32 million adults on top of that by 2030. That covers the populations of Ohio, Illinois, Indiana and West Virginia.

We need to come together now — you, me, legislators, food manufacturers, school officials, employers, health care professionals — to turn the tide around. We all have a voice, an opportunity to get involved. Parents, talk to your children's schools to ensure healthy food is being served, and rally for increased physical education. Employees, encourage employers to maintain wellness programs if they are not already doing so. All of us can contact our legislators and encourage them to fund programs that promote healthy living. We can all also learn how to read food labels so we can make good food choices.

Education propels change. I know how hard it is to get started. Just like I know how hard it is to avoid eating for comfort and to watch portion sizes. We are challenged when restaurants offer supersized portions or offer appetizers, soup and salad for free. Savvy diners prepare ahead of time by scanning the menu online and



BILL BOWEN

deciding what to eat, or dining companions can choose one meal to share.

Education keeps us focused on the goal of better health. I bring this up because some people think good health requires body perfection. That look is easily achieved in media with technology, but most real-life men and women do not look like the people shown in magazines and movies. We need to understand that eating right and exercising will allow each of us to be the best we can be, but we don't all have the same body types and metabolisms.

Education makes way for practical solutions. Stress is a major trigger, often brought on by busy lifestyles. The result: We are substituting healthy, home-cooked meals for whatever we can find to eat before a two-hour after-school practice, business meeting or some other kind of

obligation. We are trading in good nutrition and good behavior for convenience. Planning ahead can help ensure we get ample exercise and quality meals, or at least healthy snacks. We need to keep pre-portioned, frozen, home-cooked meals and low-fat cheese sticks and yogurt ready, which allows us to eat quickly — and healthy — before our obligations. Washed and cut fruits or veggies stored in baggies also allow us to grab a healthy snack on the way out the door.

Education offers hope. The more people talk about obesity — concerns, causes, costs — the more we raise awareness, and the closer we move toward identifying solutions that make everyone healthier.

There is still a lot of work to be done, but even one step in the right direction is closer than where we were yesterday. ●

## WANT MORE?

GO ONLINE/

[weightwatchers.com](http://weightwatchers.com) ►

[feedprojects.com](http://feedprojects.com) ►

[the30project.org](http://the30project.org) ►

[eatingacademy.com](http://eatingacademy.com) ►

RESEARCH/ **Ellen Gustafson and Peter Attia** offer a different perspective. You can see these two innovators on [TED.com](http://TED.com). ►



**FLORINE MARK** is president and CEO of Weight Watchers Group in Farmington Hills, Michigan, recognized as the largest franchisee of Weight Watchers International. She devotes much of her time and energy to policymaking boards that set the bar for health and wellness issues.

“I was in college during the early 1970s when *The Mary Tyler Moore Show* came out, and it was such a formative show for me that I read Jennifer’s book with great interest.”

— Donna Braden, curator of public life, The Henry Ford

→ Social Innovation

## Explore Women in TV

No one doubted where a woman’s place in television was when, on a chilly fall day in 1969, producers James L. Brooks and Allan Burns pitched their idea for a new *Mary Tyler Moore Show* to CBS executives in a Manhattan office. The perky darling of *The Dick Van Dyke Show*, they suggested, would now play a character for a new age: a divorced career woman.

No, countered the CBS executives, she would not.

In fact, they had come armed with some audience studies: “Our research says American audiences won’t tolerate divorce in a lead of a series any more than they will tolerate Jews, people with mustaches and people who live in New York.” They worried viewers would think she’d divorced Dick Van Dyke or, worse, would question her morality. They suggested she be more like the characters Lucille Ball and Doris Day were currently playing on TV, both mothers. They suggested her character not mention she was over 30.

In the end, a compromise was reached: She would be single, fleeing a failed relationship and starting over in the city.

*The Mary Tyler Moore Show* launched a new era in female TV characters: Moore’s Mary Richards was unapologetically single, over 30 and a career woman. She evolved far faster than those CBS executives at that 1969 meeting could have dreamed, eventually making a casual reference to her birth control pills, staying out all night and arguing for equal pay. As I found when I researched my book about the show, *Mary and Lou and Rhoda and Ted*, her creators also employed more female writers than any show before it. It seemed we were headed for TV parity at lightning speed.

Then, like so many parts of the women’s movement, gender progress on TV sputtered and stalled, lurched ahead, then stumbled again. For every *Charlie’s Angels*, we got a *Cagney and Lacey*. And for every great show about a strong female character, we got at least a dozen about men.

In the last few years, though, we’re finally showing signs of progress for women on TV on par with that fleeting feeling

Mary Tyler Moore and the ‘70s feminists gave us. A cynic could explain why without ever mentioning women’s empowerment: namely, because cable and the Internet have made programming infinite, and thus necessarily more diverse, and because advertisers love the ladies because we buy lots of beauty products. Whatever the reason, the breathtaking variety of women we see on television (in all its forms) is great news for us all.

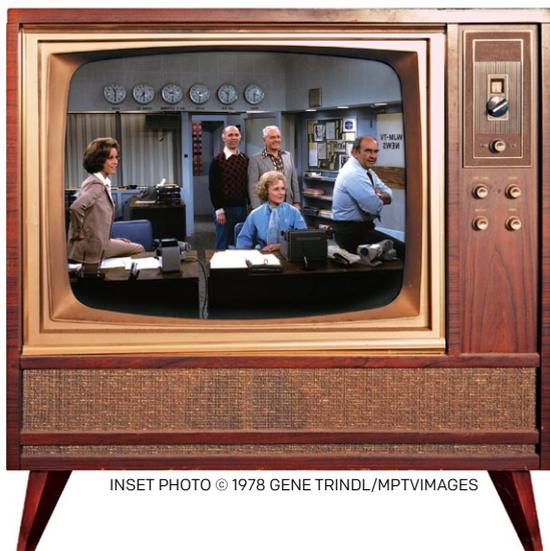
On *Parks and Recreation*, we get an overzealous local politician who’s also an unapologetic feminist, Leslie Knope. On *Veep*, we get a national politician who can trade obscene barbs at least as well as any of her male colleagues, Selena Meyer. On *Nashville*, we get two hotheaded country stars who don’t catfight but don’t much like each other, either, Juliette Barnes and Rayna James. On *The Mindy Project*, we get a doctor who’s great at her job but talks like a Valley Girl and loves Beyonce. On *Orange Is the New Black*, we get a whole bunch of criminals. And through all of these characters, we get to see some of our most brilliant actresses at work week after week — Amy Poehler, Julia Louis-Dreyfus, Hayden Panettiere, Connie Britton, Mindy Kaling.

American audiences, thank goodness, will do more than tolerate massive flaws in great female characters. They’ll cheer for them, loathe them, question their morals, love them ... and, most important, watch them. ●

### WANT MORE?

GO ONLINE/  
[SexyFeminist.com](http://SexyFeminist.com) ▶  
[oninnovation.org](http://oninnovation.org) ▶

READ/ *Bossypants*, Tina Fey, Hachette Book Group, 2012 ▶



INSET PHOTO © 1978 GENE TRINDL/MPTVIMAGES



**JENNIFER KEISHIN ARMSTRONG** spent a decade on staff at *Entertainment Weekly*, co-founded [SexyFeminist.com](http://SexyFeminist.com) and now writes for several publications, including *Glamour*, *O*, *Writer’s Digest*, *Fast Company* and New York’s *Vulture*. *Mary and Lou and Rhoda and Ted*, her history of *The Mary Tyler Moore Show*, was published by Simon & Schuster in May 2013; her collaboration with Heather Wood Rudolph, *Sexy Feminism*, was published by Houghton Mifflin Harcourt in March 2013.

“I have yet to hear a man ask for advice on how to combine marriage and a career.” — Gloria Steinem

# Blaze Your Own Trail

It wasn't so long ago that American women could be barred from applying for a job. Or prohibited from getting a credit card in their own name. Or kept from participating in a myriad of activities, like running the Boston Marathon, which for 70 years had been an all-male event until 1967, when 19-year-old Kathrine Switzer covertly entered the race, evaded a middle-aged race official who tried to tackle her and made history when she crossed the finish line.



For the past six years, I've been interviewing the trailblazers who made a revolution. One by one, they stood up to laws and customs that for centuries had kept women in their place. Whether they were activists like Gloria Steinem, among the leaders of the "second wave" of the women's movement, or athletes like Kathrine Switzer, who wasn't part of the movement but just wanted to run, col-

lectively they opened up opportunities for half our population and changed life for every American family.

What lessons can we learn from these innovative groundbreakers?

Steinem was a young journalist covering the emerging feminist movement in the late '60s when her male colleagues warned her "not to get involved with these crazy women." When she attended a forum

of women speaking about their then-illegal abortions, she says she realized her own struggles were universal and that "only if we got together as women could change be affected."

After Ruth Bader Ginsberg graduated at the top of her law school class, only to be rejected by law firm after law firm, she joined the ACLU. By the early 1970s, she had filed and won a series of landmark cases that struck down hundreds of laws discriminating against both women and men. "Anger is a waste of time," the Supreme Court justice told me.

Firefighter Brenda Berkman, who brought a lawsuit to win the right to join the New York City Fire Department, faced such withering sexual harassment that she would have quit were it not for the legacy of the suffragists, whose battle to win the right to vote in 1920 came after a 70-year-long struggle. "It was important not to give up," Berkman explained.

Today, younger women like Anu Bhagwati are continuing the fight for women's rights. A former Marine who was sexually harassed by an officer, Bhagwati founded an organization that recently helped convince the Pentagon to amend its reporting procedures to make it more likely that sexual offenders will be brought to justice.

Kathrine Switzer, who was ridiculed by the press and barred from amateur sports after she ran the Boston Marathon, went on to a career as a champion runner and advocate. In 1984, she helped win inclusion of the women's marathon in the Olympics. Switzer often advises young women that, "Sometimes the things you think are the worst things in your life turn out to be the best." ●

## WANT MORE?

GO ONLINE/

[kathrineswitzer.com](http://kathrineswitzer.com) ▶

[gloriasteinem.com](http://gloriasteinem.com) ▶

[oninnovation.org](http://oninnovation.org) ▶

[pbs.org/makers/educators](http://pbs.org/makers/educators) ▶

(for lesson plans and classroom activities)

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**BETSY WEST** is executive producer of the PBS/AOL documentary and online archive *MAKERS: Women Who Make America* and an associate professor at the Columbia University Journalism School.

 Manufacturing


# Get Smart About **Fickle Fashion**

Soon smart textiles, or textiles that have been engineered and manufactured using high-tech means or for high-tech applications, are going to be everywhere. Textiles with special properties are being engineered to repel mosquitos, conduct electrical signals or even release moisturizing aloe onto the skin. Although many are developed for military or sports applications, I'm betting we'll be seeing a lot more engineering on the fashion runway in coming years.

Even in saying that, I do think there is still a large disconnect between the science labs developing ultrathin circuits and nano-tech textiles and the apparel industries. To succeed in fashion, new high-tech textiles will need creative cheerleaders who can demonstrate their potential.

Fashion designer Asher Levine (popular among the likes of Lady Gaga and Ana Matronic, lead singer with the Scissor Sisters) and wireless company Phone Halo recently matched up for a haute-tech partnership. The two produced a custom tracking system for locating misplaced luxury jackets and bags and embedded it into an aesthetically futuristic collection. But does this type of one-off collaboration have staying power? The pairing of a very practical application with a super-artistic design aesthetic highlights the tenuous nature of fashion's obsession with newness — whatever came out last season is automatically out of style.

The flip side of fickle fashion is practical sports attire, where performance is king. Companies like Adidas and Under Armour



ENGADGET © 2013 AOL INC.

are investing heavily in development of athletic sensing attire for professional athletes. Conductive fabrics with detecting electrodes for monitoring heart rate are being refined to perform more reliably and last through a whole training season. In athletic applications so far, smart textiles are tightly linked to consumer electronics through wireless connectivity hardware and sophisticated software used by athletes and coaches to analyze biometric data. Indeed, it's the miniaturization of tech thanks to the popularization of cell-phones that is just now making it feasible to pair electronics with garments, both in size and cost. There's still a long way to go before the combo transitions from bespoke to mainstream, but the DIY wearables community is picking up speed.

► Asher Levine's luxury bag design incorporates TrackR Bluetooth technology and can be traced using a smartphone app and GPS technology.

The nozzles of most 3D printers may mainly print plastics to date, but biomedical and materials research is pushing to overcome barriers of manufacturability for all sorts of new materials, like the "matter compilers" in the sci-fi novel *Diamond Age*. Imagine the impact on the textile industries when you can buy leather that's been printed in a lab to your color and texture specifications, with no imperfections that come along with its natural counterpart. However, new smart fabrics must prove their desirability and comfort, lest they fall out of fashion faster than you can say "double-knit polyester pants." ●

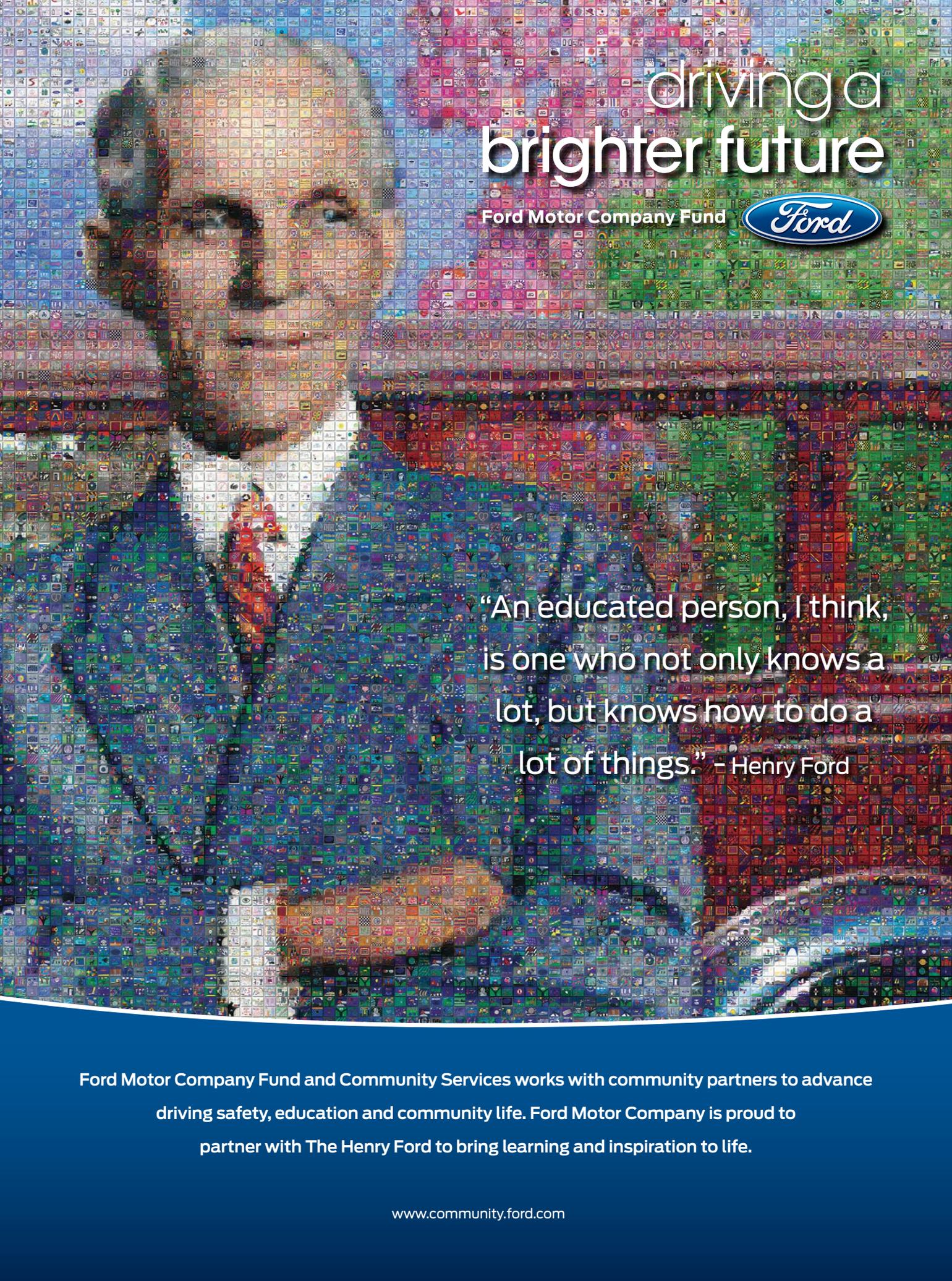
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[ffff.at](http://ffff.at) ►  
[ecouterre.com](http://ecouterre.com) ►

READ/ *Women Designers in the USA, 1900-2000, Diversity and Difference*, Pat Kirkham, Yale University Press, 2000 ►



**BECKY STERN** is director of wearable electronics at Adafruit Industries, a DIY electronics and kit manufacturer in New York City. She creates do-it-yourself wearable electronics projects for hobbyists and designers. She's a member of the art groups Free Art & Technology (FATLAB) and the Madagascar Institute, and also teaches in the Products of Design Department at the School of Visual Arts.



# driving a brighter future

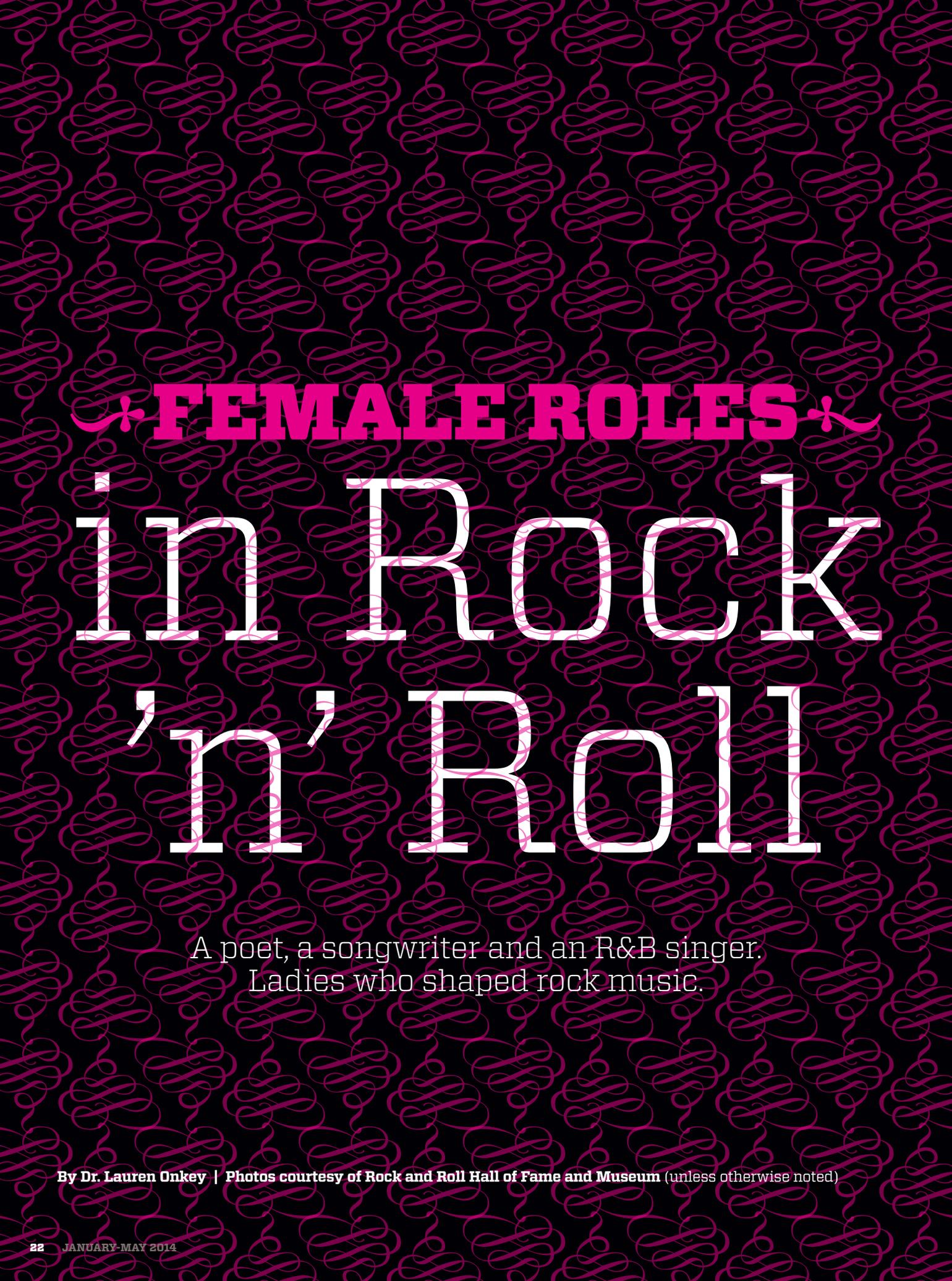
Ford Motor Company Fund



“An educated person, I think,  
is one who not only knows a  
lot, but knows how to do a  
lot of things.” - Henry Ford

Ford Motor Company Fund and Community Services works with community partners to advance driving safety, education and community life. Ford Motor Company is proud to partner with The Henry Ford to bring learning and inspiration to life.

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**FEMALE ROLES**

# in Rock 'n' Roll

A poet, a songwriter and an R&B singer.  
Ladies who shaped rock music.

By Dr. Lauren Onkey | Photos courtesy of Rock and Roll Hall of Fame and Museum (unless otherwise noted)



■  
**ROCK GODDESS  
REDEFINED**

Punk pioneer Patti Smith invented a visual style that drew from the power and sexuality of male rock gods such as Bob Dylan and Keith Richards.

# I fell in love with rock 'n' roll when I was very young.



**WOMEN WHO ROCK: VISION, PASSION, POWER EXHIBIT**

Henry Ford Museum will host the Rock and Roll Hall of Fame and Museum's *Women Who Rock* exhibit from May 17 to August 17, 2014. The exhibit gives visitors the opportunity to connect the music and female artists with the larger cultural shifts that have happened in women's lives since the 1950s.

**SAVE THE DATE! THURSDAY, MAY 15 WOMEN WHO ROCK PREVIEW PARTY**

Don't miss out on hearing the stories and seeing the exhibit before it opens to the public. Special guest: Original MTV VJ Nina Blackwood as party MC. Tickets are limited. For more information about the preview visit, [thehenryford.org/WomenWhoRock](http://thehenryford.org/WomenWhoRock).

**SEE PAGE 60**

*This exhibit was organized by the Rock and Roll Hall of Fame and Museum, Cleveland, Ohio.*

The incredible music soaring out of my sister's record player captivated me: The Beach Boys, the Motown catalog, Sly and the Family Stone and the Beatles were the soundtrack of my childhood and adolescence. They set standards of aesthetic beauty and cultural impact for me as I looked for my own rock 'n' roll heroes in the 1970s. But although I admired many female performers, it always seemed like rock 'n' roll was for men. Male performers defined the freedom and license of the music.

I didn't let this alienate me — I still felt I had access to the music — but I also didn't feel I could quite claim it as my own. And as I began to learn more about rock 'n' roll's past and start my journey to becoming a popular music scholar, educator and part of a team that educates people about the history of rock 'n' roll, I did realize something. Women's contributions to rock's history were often unseen or downplayed.

But that didn't mean they were not there.

**GIRL POWER**

Clearly, the social revolutions of the 1960s opened up roles for women in rock. Women such as Janis Joplin, Grace Slick and

Aretha Franklin became major superstars. But there was a nasty underbelly to what was happening for women in rock 'n' roll in the '60s. More often than not, women were confined to the role of lead singer, often dismissed as the "chick singer," the eye candy that didn't make a real musical contribution.

When punk music emerged in the mid-1970s in rebellion against some of the excesses of rock 'n' roll, something changed. A new space in the music sphere opened, where women weren't required to be an object of men's desire in order to take the stage. Punk, in fact, encouraged women to pick up instruments, shatter the conventions of lyrics and songs and create their own persona, style and presence. As the Pretenders' Chrissie

Hynde has said, "That was the beauty of the punk thing. [Sexual] discrimination didn't exist in that scene."

When I first heard and saw punk pioneer Patti Smith in 1976, it opened up a new world for me — something I think happened for thousands of listeners everywhere. She shattered any preconceived notions about what women — or anyone, in fact — could or should do with music.

Smith was a poet who took from Arthur Rimbaud's *A Season in Hell* and Russian poet and futurist Vladimir Mayakovsky. At the same time, she drew inspiration from Bob Dylan, Jim Morrison and Keith Richards. She gave poetry readings backed by guitarist and rock critic Lenny Kaye that created an unruly, captivating sound. Her first record, a cover of Jimi Hendrix's *Hey Joe* released in 1974, helped pave the way for the sonic and visual explosion of punk.

Why her? Because Smith invented a visual style that drew from the power and sexuality of male rock icons such as Bob Dylan and Keith Richards. She prowled the stage like she owned it, singing some of the most original rock of the time period. She performed with authority, originality and license. Freedom, she said, was "the right to write the wrong words."

What surprised me, though, was how her music was linked not only to '60s rock gods such as Hendrix, Morrison and the Rolling Stones but to the drama of the girl group era as well.

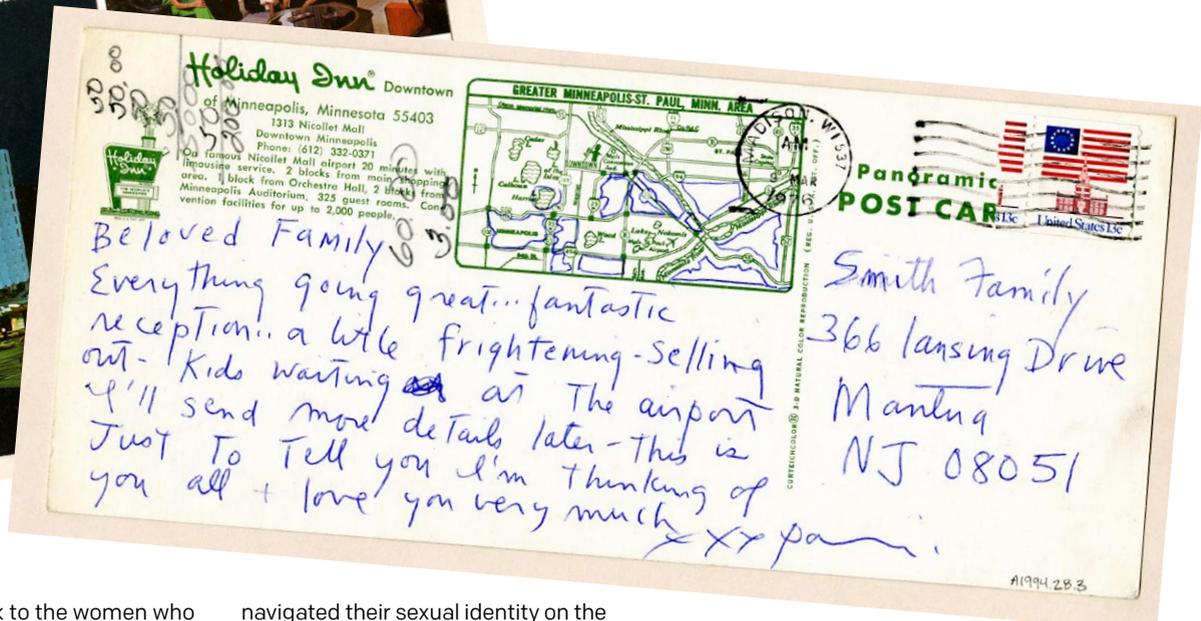
Girl groups such as the Bobbettes, Chantels, Shirelles and Ronettes dominated rock in the early '60s. While sometimes seen as puppets manipulated by unseen and mostly male handlers, they were an authentic expression of the world view of teenage girls at the time — a demographic just coming into its own and increasingly recognized for its growing economic power as consumers and arbiters of style. Girl groups reflected teenage girls' explorations of their world, their limitations and their limitless potential.

After making my connections to girl groups, I was drawn to further explore

**"The right to write the wrong words."**

— Patti Smith, on freedom

**Holiday Inn Downtown**  
Minneapolis, Minnesota



rock's history, go back to the women who worked in music and gave this teenage generation its voice.

**THIS WOMAN'S WORK**

In the '50s and '60s in an office building in New York City called the Brill Building, songwriters worked in the same mode as New York's Tin Pan Alley district songwriters of earlier in the 20th century. Writing songs was a job, not a random creative process. Here, you went to work every day in a cubicle and tried to pen hits, not for yourself, but for other artists. This was an era viewed by many as more establishment than revolutionary.

But the rock 'n' roll explosion transformed the New York songwriting world — young songwriters started to take over and write songs for their peers, songs that reflected the concerns and passions and worries of a shared community. This is where talented female songwriters like Carole King found a home, creating a space for the thoughts of young women to be heard on the charts.

King wrote with husband Gerry Goffin and combined soaring arrangements, undeniable hooks and emotional melodies with simple lyrics that resonated as authentic with millions of young listeners, especially young women. King and Goffin's *Will You Love Me Tomorrow* recorded by the Shirelles — a tune about a girl who just might let a guy sleep with her, but she wants to know if he'll still love her in the morning — captured the excitement and confusion of young women as they

navigated their sexual identity on the brink of the sexual revolution, the introduction of the pill and the emergence of the women's movement.

As Cynthia Weil, another Brill Building songwriter of the era, has said, "Carole spoke from her heart, and she happened to be in tune with the mass psyche. People were looking for a message, and she came to them with a message that was exactly what they were looking for."

King's music helped create a sound where women felt heard and supported. Eventually, she would find her own voice, singing her own songs on the album *Tapestry* in 1971, which struck the collective grounding chords of friendship, love and relationships with young people in America who were still reeling from the assassinations of Robert Kennedy and civil rights leader Martin Luther King and the untimely losses of great rockers such as Hendrix and Joplin.

*Tapestry* held the title as the top-selling solo album until Michael Jackson's *Thriller* surpassed it 17 years later.

So after discovering the girl group era — one often sadly dismissed as pop, bubblegum, "just" music for girls — I began to wonder what else I was missing and didn't know. Were there other powerhouse women earlier in rock not being given their due?

**SOMEONE'S DAUGHTER, PUNK'S MOTHER**

A postcard penned by Patti Smith (above) to her family hints at her swelling fan adoration. Part of Smith's persona was wrapped up in her androgynous dress code, which included the boots below.



**GET TO KNOW PATTI SMITH**

She has said Russian poet and futurist Vladimir Mayakovsky is the first real rock 'n' roll star.

Maria Callas and John Coltrane. Two artists Smith considers big influences on her.

*Rolling Stone* listed Smith at #47 on its list of The Immortals: 100 Greatest Artists of All Time.

Michael Stipe of *R.E.M.* said that after listening to Patti's album *Horses* when he was 15, he decided to start his own band.

Patti Smith was inducted into the Rock and Roll Hall of Fame in 2007.



MICHAEL PUTLANDGETTY IMAGES

“I think Carole King’s as important as the Beatles in America. **There should be a statue to her in the middle of New York.**”

— Billy Joel, on Carole King’s contribution to music

GET TO KNOW CAROLE KING

She is considered one of the most successful female songwriters of the 20th century, writing or co-writing some 400 songs recorded by more than 1,000 artists.

Carole King on growing up: “I was never told you can’t do this because you’re a woman ... My parents always told me I could be anything I wanted to be.”

She co-wrote the popular song we all hear at weddings, *The Loco-Motion*. She let her babysitter Eva record it. It was a huge hit and has been re-recorded and topped the charts for the likes of Grand Funk Railroad and Kylie Minogue.

Carole King was inducted into the Rock and Roll Hall of Fame in 1990, along with husband Gerry Goffin.

**A MOTHER FOR R&B**

The mid-1950s was rock ‘n’ roll’s “big bang” moment — music produced in a wild mix of styles from across the United States. Young musicians were singing louder and faster on records produced by entrepreneurs and dreamers. The music crackled with sexual energy and gave voice to those on the margins of society. Although several important female artists are part of this revolution, it was a period defined by male stars and male sexuality: Elvis Presley, Chuck Berry, Little Richard, Fats Domino, Jerry Lee Lewis. As a result, the vitality and freedom of rock ‘n’ roll was defined very early as “a man’s world.” The rock ‘n’ roll stage was not an inviting place for women.

Ruth Brown was an exception. Brown signed with the rhythm and blues label Atlantic in 1948. Atlantic, headed up by Ahmet Ertegun, had a growing reputation as a leader in recording R&B, the sound that became rock ‘n’ roll. By the mid-1950s, Brown was churning out hit after hit that captured the excitement of the era: *5-10-15 Hours*; *Mama, He Treats Your Daughter Mean*; and *Lucky Lips*. Commentators of the time even quipped that R&B actually stood for “Ruth” and “Brown” rather than “rhythm” and “blues.”

**DYNAMIC DUO, INCREDIBLE INDIVIDUAL**

Carole King and husband Gerry Goffin (above left) wrote a series of hit songs that spoke to a generation of young women. Once on her own, King (top) continued her legacy, releasing one of the top-selling solo albums of all time.



Fellow Rock and Roll Hall of Fame inductee and friend Bonnie Raitt said about Brown, "What I loved about her was her combination of vulnerability and resilience and fighting spirit. It was not arrogance, but she was just really not going to lay down and roll over for anyone."

Ruth Brown, like so many other women in the industry, would not be denied her place in music.

Not only that, when these women grabbed on, they redefined music in new and exciting ways, whether from the center or the margins. ●

**ONE WOMAN, EVERYONE'S VOICE**

Ruth Brown (left), who catapulted the Atlantic label to stardom, was known for being vocal about her music, her rights and the rights of other artists.

Brown was so successful that she brought financial security to the young label that was dubbed "The House That Ruth Built." Even so, she was forced to pay her own recording and touring expenses out of pocket — costs that nearly equaled her cut of sales. And she had to stomach the common and socially acceptable practice of the time as white performers covered the tunes she first popularized, getting all the extra exposure and revenue as a result. "I never got to do *The Ed Sullivan Show*," Brown once noted. "Patti Page did."

Although Brown's music helped to create rock 'n' roll itself — Little Richard later acknowledged Brown's signature sound as an influence — her powerful personality and resilience did much more for its future. She fought a decades-long battle to reform the music industry's royalty system and won. She also co-founded the Rhythm & Blues Foundation in the '80s to help her fellow R&B singers with their financial and medical needs and to educate the next generation in this important genre of music.



**GET TO KNOW RUTH BROWN**

She didn't think much of formal music training. "In school, we had music classes, but I ducked them ... I didn't want to learn to read no note. I knew I could sing it."

Ruth Brown played Motormouth Mable in John Waters cult film classic *Hairspray* (1988). Above is the dress she wore in the film.

You can hear her influence when you listen to artists such as Little Richard, Aretha Franklin, Etta James, Janis Joplin, Tina Turner and Christina Aguilera.

Ruth Brown was inducted into the Rock and Roll Hall of Fame in 1993.

**OTHER SOURCES**  
Want to know more about the ladies of rock 'n' roll?

- 1 In conjunction with the *Women Who Rock: Vision, Passion, Power* exhibit, PBS has produced a related documentary. For more info visit [www.pbs.org/arts/exhibit/women-who-rock/](http://www.pbs.org/arts/exhibit/women-who-rock/)
- 2 You'll also find educational resources that the Rock and Roll Hall of Fame and Museum created at [www.pbslearningmedia.org](http://www.pbslearningmedia.org). Type Cyndi Lauper, Bonnie Raitt, Darlene Love, Cynthia Weil or Heart in the search box and see what comes up.
- 3 The Rock and Roll Hall of Fame and Museum's Library and Archives is one of the most comprehensive repositories of materials relating to the history of rock 'n' roll. [library.rockhall.com/home](http://library.rockhall.com/home)
- 4 Put these books on your reading list:

*She's a Rebel: A History of Women in Rock and Roll*. Gillian Gaar, New York: Seal Press, 2002.

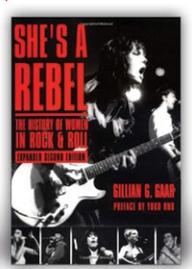
*Girls Like Us: Carole King, Joni Mitchell, Carly Simon and the Journey of a Generation*. Sheila Weller, New York: Atria Books, 2008.

*Women on Top: The Quiet Revolution That's Rocking the American Music Industry*. James Dickerson, New York: Billboard Books, 1998.

*Respect: Women and Popular Music*, Dorothy Marcic, New York: Texere, 2002.

*Rock She Wrote: Women Write About Rock, Pop and Rap*. Evelyn McDonnell and Ann Powers, eds., New York: Cooper Square Press, 1999.

*Trouble Girls: The Rolling Stone Book of Women in Rock*. Barbara O'Dair, New York: Random House, 1997.





# Pure & Simple

What do we learn when two designers come clean about their truths for good design?

By **Julie Wolfson** | Photos by **Dave Lauridsen**



#### EDITOR'S NOTE:

When we decided to dedicate this issue of *The Henry Ford Magazine* to groundbreaking women past and present, we knew we wanted to share intimate portraits of individual women who have made or are making paradigm shifts in categories such as design, technology and manufacturing. Areas full of rich ideas, innovations and industries that The Henry Ford strives to preserve, celebrate and share with millions of people each year. We were searching for women who took cues from the past and have moved or are moving the world forward in inspiring ways. But how to choose who should be featured; the pool of possible candidates from decades past and present day is so vast. Then the light bulb went on, so to speak. We realized the ideal candidates were in our direct professional circle. Two women who were working in extremely different industries (ceramics and wireless entertainment) that The Henry Ford was collaborating with and recognizing through its relationship with the Industrial Designers Society of America (IDSA), considered the true voice of industrial design in the U.S.

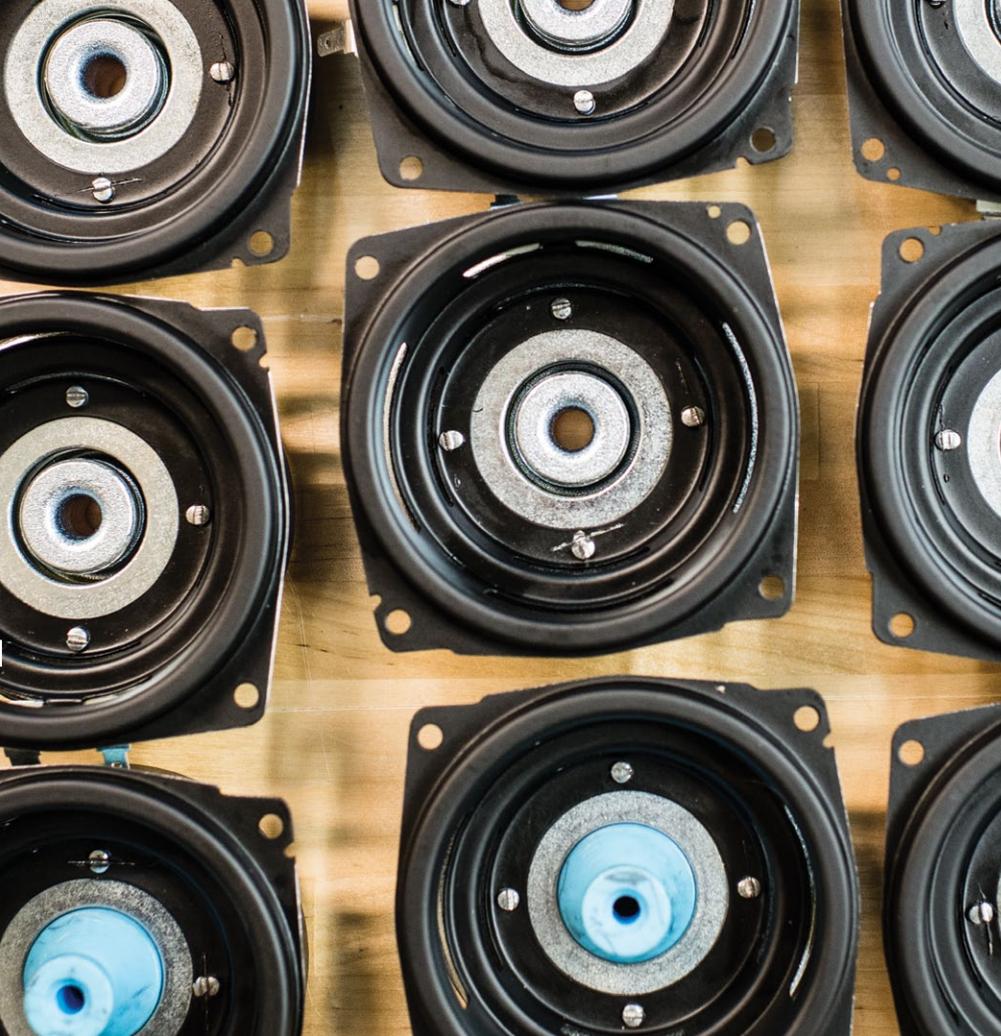
As you read their stories, we hope you discover what we did. Although these women are on different paths and design and manufacture dissimilar products, their vision, inspiration and legacies have much in common.

#### Catherine

Bailey of Heath Ceramics and Mieko Kusano of Sonos:

These innovators find inspiration on mountaintops, in everyday vessels and in being part of the creative communities that surround them. Finding connections between sleek high-tech wireless speakers and functional midcentury pottery yields surprising results.

Standing in the glow of SOFTlab's "Light House" installation and listening to the dreamy soundscape of electronic musician Washed Out with Sonos' architect Mieko Kusano, one could not imagine discovering connections with the work of Catherine Bailey at the California heritage pottery company Heath Ceramics. Although their companies and daily tasks appear at first glance to be at opposite ends of the design spectrum, the overlap of influences is surprising. Conversations with these two innovators cover everything from the philosophy of Bauhaus and the charm of simple food vessels to the clean aesthetic of Japanese design. At Sonos, product development typically takes several years to complete a design. In the Heath factory, vessels carry the heritage legacy of midcentury shapes that look and feel relevant today. Both Bailey and Kusano value the craft, collaboration and communities that surround their inspiring work.



# Catherine Bailey



◀ Catherine Bailey was a 2013 International Design Excellence Award (IDEA) jury panel member.

## A decade ago, Catherine Bailey and her husband, Robin Petravic, bought Heath Ceramics, the heritage California pottery company founded in 1948 by Edith Heath.

Heath developed an energy-saving, low-temperature technique for making single kiln-fired objects that went on to become iconic examples of midcentury design. Bailey visited the Heath factory 10 years ago with the idea of offering up consulting services. What Bailey discovered was a company rich in tradition but lacking the means to meet the challenges of the 21st century.

She and Petravic made a life-changing decision to buy the company, keep as many employees as possible and continue to make Heath Ceramics products in California. The new structure for the company led to opening a flagship store in Los Angeles and, more recently, a tile factory in San Francisco's Mission District. Now the new San Francisco home of Heath Ceramics houses a flagship store, studio space, and room to grow and collaborate with the creative community.

When asked why she and Petravic took the risk of buying Heath Ceramics, Bailey said, "Both Robin and I feel there is a lot of good old thinking that gets discounted and thrown out. Everybody's moving so fast-forward and forgets about some of the good ways of doing things in the past that are more conscious or ecological. There was a lot to appreciate from this place that still existed."

As Heath Ceramics gained a new level of exposure, Bailey forged partnerships with chefs, restaurants and other like-minded innovators in the creative community. When asked why Bailey wanted to acquire Heath and eventually expand the capabilities of the company, she said, "The Sausalito facility that was built in 1959 was our only production home and no longer met our needs. Now people can come in and see things being made in our new tile factory surrounded by big glass panels. It is a much more intentional merger between the dif-

ferent things people can experience at Heath. It is a central space for the community. The new facility will be the creative heart of Heath."

The company that Edith Heath began 65 years ago is alive and well today. Bailey honors the legacy of Edith Heath's work. "What was inspiring about her and how she did things was she just did it her way. She didn't care what anyone else was saying. She had an initial philosophy that guided her, and that was how it was," said Bailey. "There is something really strong and clear about that. During her early education, she was introduced to Bauhaus philosophy. She was really interested in material and the craft of making multiples. She spent her whole life focused on doing that really well."

In Heath's Los Angeles store, Bailey and Petravic's friend, potter Adam Silverman, serves as the studio director and has helped them explore the kinship with Heath and Japanese ceramics. Silverman has curated shows by Akio Nukaga and Playmountain. "In Japanese culture, ceramics are respected and understood by a large audience," said Bailey. "Akio's work has some very modern lines, even though his techniques are more traditional. It brings those two things together, which is why it looks really good in the store and everything seems to make sense."

Bailey now spends her days supervising the world of Heath and collaborating with her staff and artists for various projects and exhibits. "It's how I want to spend my day," added Bailey. "Walking around the factory and being able to see everything and being able to talk to everyone involved, from ordering materials to manufacturing to selling it in a store and meeting the customers. It feels satisfying and responsible."

Edith Heath's dinnerware captured the attention of Frank Lloyd Wright, who often specified Heath dinnerware for his projects.

Form follows function, so says Bauhaus. Utility always comes first.

Catherine Bailey recently became inspired by Estrid Ericson. Discover Ericson's Swedish design shop Svenskt Tenn. [svensktenn.se/en-us/pages/article/estrid.aspx](https://svensktenn.se/en-us/pages/article/estrid.aspx)



### WHAT'S OLD IS NEW AGAIN

At Heath Ceramics' new San Francisco factory, age-old pottery techniques perfected 65 years ago by founder Edith Heath are still in use.

# Mieko Kusano

After attending numerous shows and events at Heath Ceramics, turning the focus to Sonos, a Santa Barbara-based manufacturer of consumer electronics, feels at first like a leap into the future.

The team at Sonos creates multi-zone digital music systems and surrounds itself with music innovators from Questlove to Deadmau5.

Last year, Sonos built a studio in Los Angeles to showcase music the team loves and create a space for sound-focused art installations. The visionary gallery space, filled with state-of-the-art Sonos sound equipment and experimental art and music projects, might at first seem light years away from the world of Heath, but then enters Mieko Kusano, who, working with a team of designers and engineers, turns any preconceived notion on its head.

Kusano, who is half-Dutch and half-Japanese, was raised in the Netherlands and traveled to Japan many times. "I was heavily influenced by both cultures in terms of my design thinking and design aesthetics," shared Kusano. "The functional minimalism from Northern Europe meeting the Zen experience of Japan formed an interesting recipe for me, to find tension or balance in a design aesthetic that is on the one hand reduced to its essence, but on the other hand provokes an emotional connection."

Discovering a thread linking both of these California innovators to Japan starts to make even more sense. Finding a connection for both companies to ceramics brought on a whole new "aha" moment. Kusano said, "One of my father's closest friends, Masaya Yoshimura, decided later in life to pursue his passion and learn ceramic art at Kuwasawa Design School."

Kusano visited his workspace, called Nazuna Kama, for the first time in the '90s when she was in her early 20s and studying industrial design engineering. "The trips to his workspace were very inspiring," she said. "His

Mieko Kusano co-designed the Sonos SUB, winner of the IDEA 2013 Curator's Choice Award, which is awarded by The Henry Ford's chief curator each year. ▶



work is all about finding the essence of an artifact through thoroughly understanding the experience. 'Designing a good teacup,' he told me once, 'can only be achieved by understanding Japanese tea ceremony.'

Yoshimura inspired Kusano to look at objects in the context not only of their functional purpose but also in terms of the emotional connection people could have with them. "Yoshimura-san sources his clay and glazes locally. It is literally coming from the mountain where he built his studio," explained Kusano. "By using this one type of material, he has come to understand its unique attributes, like how it can change color and transparency when coming in contact with fluids or heat, and he uses that in the design."

These visits to Japan inspired Kusano to find ways of introducing more craft into her work designing high-tech products. "There is no reason why these could not have a similar attention to detail and quality, rooted by an understanding of material use and functional elements," said Kusano. "I like to call it design from the inside out. At Sonos, our design mission is to passionately craft the best listening experience at home."

Kusano started her career with Philips Design in the Netherlands. "The overall culture was the work of Stefano Marzano, who inspired us to take no prisoners and challenge the way products had been created in the past. He pushed us to make products with more lasting impact and said that 'products should age with dignity,'" said Kusano. "Here at Sonos, we design products that work together so that people can extend their wireless hi-fi system at home. Aging with dignity is an important theme for us. We design physical products that last 10 years or more, and we rejuvenate them over time with software upgrades and access to new music content."

The first Sonos player Kusano designed was a compact wireless amplifier. Rather than going for a futuristic look, Kusano created a shape that echoed traditional Japanese lacquer, or bento, boxes. "We wanted customers to place these products in multiple rooms of their homes, and as a result, we were careful to instill the product with a timeless, domestic and approachable personality." •

#### AGING WITH DIGNITY

Sonos designs physical products that are meant to last 10 years or more; rejuvenating them over time with software upgrades and access to new content.

"His work is all about finding the essence of an artifact through thoroughly understanding the experience. **'Designing a good teacup,' he told me once, 'can only be achieved by understanding Japanese tea ceremony.'**"

— Mieko Kusano, on Masaya Yoshimura

## THE OSCARS OF GOOD DESIGN

Design. It's a place where all are encouraged to adapt what they know to make something better. Design looks to history and the here and now as allies, building blocks to the what's next.

That's why there's no better place than The Henry Ford for fierce debates, thoughtful discussions and final decisions on the year's most forthcoming and inspiring designs from seasoned and novice creators. Since 2010, Henry Ford Museum has been the stomping ground for members of the Industrial Designers Society of America (IDSA) as they play final judge and jury, deciding on the winners of the annual International Design Excellence Awards (IDEA), considered the Oscars of design.

In 2013, Sonos won the Curator's Choice Award, given by Marc Greuther, chief curator of The Henry Ford. Out of 687 finalists, Greuther chose the Sonos SUB, a wireless subwoofer that can fill an entire room with layer upon layer of bottomless sound — where you hear every chord, kick and roll.

"Sonos has a peculiarly liberating effect," said Greuther. "You can simply get to what

you want to hear, and the system stays out of the way. Sound quality is high and the physical system is discreet."

Greuther, along with a 24-person jury (made of international design experts from design consultancies, corporations and universities), spent weeks previewing IDEA entries online and then engaged in two-and-a-half days of face-to-face debate and hands-on evaluation of entries at The Henry Ford — surrounded by millions of artifacts inspired by everyday people with grand ideas. On this year's jury panel: Catherine Bailey of Heath Ceramics.

Want to learn more about this year's winning designs and designers? Visit [idsa.org](http://idsa.org).

#### DID YOU KNOW? /

Each year, the IDEA winners become a part of The Henry Ford's permanent collection.

**ONLINE** Visit [idsa.org/images/pdfs/innovation\\_Fall2013\\_curator.pdf](http://idsa.org/images/pdfs/innovation_Fall2013_curator.pdf) ▶

When you look at Japanese design, notice two principles that are paramount — functionality and simplicity.

"Design is an issue related not to the individual but to the masses — it is an issue of society."  
— Yoko Kuwasawa, founder of the Kuwasawa Design School

Simplicity in all forms is heavily seeded in Japanese culture.

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](http://oninnovation.com).



ANN MARIE  
**SASTRY**

# the ENGINEER

## THE ENTREPRENEUR AND BATTERY MAKER SAYS IRRATIONAL OPTIMISM AND A DOSE OF DERRING-DO INSPIRE GREAT INNOVATION

Ann Marie Sastry wants to put next-generation solid-state batteries in cars. And her company, Sakti, is right there in the race to be the first battery manufacturer to do it. But when you look a little closer, you'll find there's something special about Sastry's approach to making electric vehicle batteries lighter, safer and longer-lasting. She isn't actually interested in being the first to develop a product that works. Any one of the hundreds of start-up battery companies in today's burgeoning clean tech sector with the right brains, brawn and financial fortitude can probably do that. Sastry wants to be the first to develop a product that works and that everyone can, and will, want to buy in hundreds of different markets around the world. (Catch the similarities to Henry Ford's story and his lofty vision for the automobile 100+ years ago?) That means she wants her technology to:

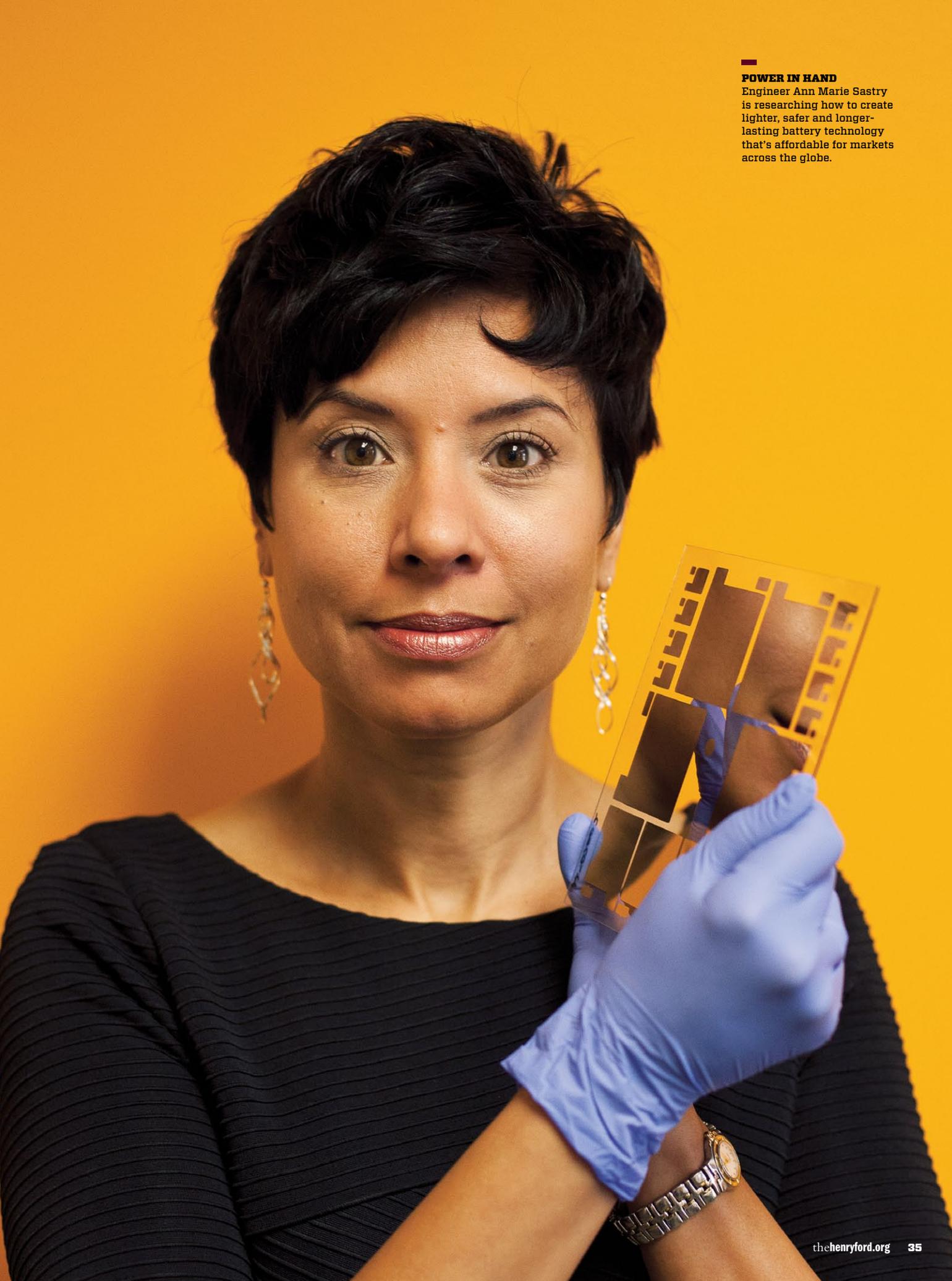
- Be practical for established as well as emerging markets
- Be affordable across all socioeconomic ladders
- Generate new policy and infrastructure
- Create a new consumer experience that improves people's lives along with the health of the planet

A perfect model of mass-production engineering, right?

When The Henry Ford approached Sastry as part of its OnInnovation initiative, she spoke candidly about the growing competition to solve the electric vehicle's battery problems and how you have to welcome the fight (aka the competition) if you really want to see the best solutions come forward. She also shared her thoughts about the importance of collaboration, being open to learning from unlikely sources and why most innovators — herself included — like the sensation they get when they take big gambles in hopes of solving the world's biggest problems. ▶

**DID YOU KNOW?** /  
A solid-state battery has both solid electrodes and solid electrolytes.

PHOTOS BY BILL BOWEN



**POWER IN HAND**  
Engineer Ann Marie Sastry is researching how to create lighter, safer and longer-lasting battery technology that's affordable for markets across the globe.



**DID YOU KNOW? /** Solid-state batteries have been on the *MIT Tech Review Magazine* annual list of the 10 energy technologies expected to have the greatest impact.

**DID YOU KNOW? /** Sakti has repurposed machinery that once manufactured potato chip bags to develop rechargeable solid-state batteries.

**OI** ▶ Why start a company that makes advanced batteries for cars?

**AMS** ▶ We know the markets for cars will dwarf those of today's markets as people join the middle class all over Asia, Brazil, Russia, India, China, the BRIC nations. Those markets will be prodigious. What that means, then, is that there'll be lots more people driving cars. It would be great if we could intercept those markets with electric vehicles rather than IC engines.

I've always been an electric vehicle fan, and when I was in research, I worked with a lot of different people on all kinds of problems in biology, in mathematics, in engineering physics and electric chemistry, but we kept coming back to batteries. We saw that as a key challenge, a key opportunity. If you can solve the battery problem, then you have a chance at getting electrification technologies on the road.

And in our case, a "terrible" thing happened when we tried to make batteries in the lab the way we thought they should be made — the first set worked. It's always dangerous when a first set of things you try surprise and delight. That lightning strike led to a late-night conversation in the lab, and one of us said, "Well, we should just start a company."

**OI** ▶ What are some of the challenges of turning a scientific breakthrough into a commercial endeavor?

**AMS** ▶ It turns out it's pretty hard to start a company, but it's also the most fun I've ever had. We could have just continued writing papers and wait for others to come along and license the technology or sort of follow the recipes we laid down. Or we could understand what the needs, industrially, in the markets were and try to meet them ourselves. And so we decided to spin out as a company and quickly con-

nected with a venture capital group willing to fund us.

Besides the technology, the most important elements you have to have to warrant starting a company are the team and the markets. For the team, I wanted to bring like-minded people to Sakti to become trained in our ways and let them train us in theirs. That's something every leader has to get comfortable with very quickly. When you search out outstanding people, not only will you acclimatize them — teach them your culture — but your culture will change when you bring them in. It's a good thing.

But a great team isn't enough if the markets aren't there to ply your wares to, right? Vice versa, if you have the markets but an inadequate team, you may wind up selecting a lesser technology because you can't execute the better one. You have to have both.

**OI** ▶ Tell us how advanced battery technology works or maybe how you envision it should work?

**AMS** ▶ In a car, you have to pay to carry around your own power supply. So you don't want a technology that stores energy and is very heavy because you won't be able to carry it. Energy density ends up being a very critical parameter. Lead-acid technology had a relatively low energy density. Nickel-metal hydride technology came around and approximately doubled that energy density. Lithium-ion technology approximately doubles that energy density. The reason you see teams like ours chasing second-generation lithium technologies is precisely so we can get to the next level — batteries that live longer, are lighter weight and safer.

What's interesting to me is the bifurcation in battery technology. There are



**“If you really care about technology, if you really would like to see the best solutions come forward, you welcome the fight.”**

— Ann Marie Sastry, Sakti

**TESTING BLOCK**

Batteries undergo rigorous tests in the Sakti labs.

always the groups trying to make the world's best. And there are groups trying to meet markets. What we don't have enough of is groups trying to do what's in the middle, which is improve technology, but in a way that you could put it into an engineered product. Why chase a particular nanoarchitecture, for example, that is very difficult to execute, make and deliver? We've picked a technology area that is massively replicable and massively scalable and, what we believe, can be optimized. We'll see if our approach works. The area is ripe for innovation.

**OI** ▶ Holding to cautious optimism then?

**AMS** ▶ A couple of decades ago, I was a young composites researcher. Many of us who were working carbon-fiber technologies then just knew everyone was going to pick carbon-fiber composites. Guess what? Steel got better — much lighter, much cheaper — and in many cases beat out composite materials.

It would have been a mistake to rule out the older technology and assume innovations couldn't occur.

**DID YOU KNOW?** / Sakti was on the MIT Tech Review Magazine list of the Top 50 Most Innovative Companies in 2012.

I don't think the dust will settle on the key propulsion systems in the next decade. I think that'll take 50 years, and during that time, you will see the clean energy technologies duking it out in the marketplace, the labs, and in young and existing companies.

And if you really care about the technology, if you really would like to see the best solutions come forward, you welcome the fight. And you never say, "Well, it's absolutely going to be this or it's absolutely going to be that."

**OI** ▶ How do you attract people with the skills and the will to fight the fight with you?

**AMS** ▶ You have to create an environment where they feel, and it's materially true, that they can change the environment. You have to accept that the most junior person and the most senior person will come to an organization and change its culture, and that's good.

At Sakti, we not only expect mentorship of the most senior people chronologically, or in the age of experiment experience in better technologies, to the most junior people. We also expect the reverse — mentorship up and down the scales. I think this mentality builds a team. It creates less hierarchy and more collaboration.

I've had the good fortune to work with people who stretch themselves, take their credentials and fit them around any problem they want to work on. And when everybody is stretching, you really sort of see the bones of a really smart group, no matter how disparate its members may seem. You see everybody get their credentials, backgrounds and wattage around a problem. That's great fun.

**OI** ▶ How does the fun, the innovation, begin?

**AMS** ▶ People have all kinds of ideas about how to innovate and what that means to them. I think the first thing is to pick a good problem. A problem where you know you'll make a difference if you solve it. Know that it's better to fail at something of consequence than to work on something of no consequence.

Vehicle electrification is a great problem. What's the bottleneck? What's preventing my favorite technology from hitting the road? I see several. Electric machines aren't as good as they could be. Controls aren't as good as they could be. Vehicles weigh too much; they're too heavy for a reasonable propulsion system. But really, it's about the battery. If we had better batteries, we could really open up this



**MEETING OF MINDS**

Ann Marie Sastry (left) and colleague Dave Leksell collaborate. Mentorship and less hierarchy are fundamentals of Sakti's work environment.

innovation space. If they were made of lighter weight materials. If we could make them live longer, because emerging economies don't have the dealer networks we do. If we could make them in a way that is massively replicable to keep costs down. And we need to do this quickly, because a lot of people are about to buy cars.

You keep narrowing down the design space. Deciding to work on solid-state battery technology was sort of this cascade of decisions, guided innovation, for us.

**OI** ▶ Guided innovation. An interesting term. Can you explain a little further?

**AMS** ▶ In different areas of clean tech, groups are making choices based on — guided by — what they identify as the bottleneck. Talk to people innovating in this space, and they're convinced that they are looking at the bottleneck, that they have picked the technology problem that "if I could just solve that one, it could upset the apple cart." When it comes to the vehicle drivetrain and propulsion, some are looking at capacitors, others biofuels and diesel technologies and, even still, fuel cells. And that's good.

All the innovators in these spaces that I have had the privilege to get to know have a certain irrational optimism and what goes along with that — a willingness to fail. You have to because you might get 50 percent of the way on logic, and then you have to place a huge bet and ask your team to follow you on your merry path to make a change. Just about every entrepreneur you talk to not only has had this sensation but likes this sensation — likes placing a bet and seeing if they can get a really great team together to chase a really great problem.

**OI** ▶ You're a mechanical engineer, a researcher, a professor and an entrepreneur recognized by Forbes as one of the nation's top 12 women in clean tech. Can you share some of your biggest life lessons so far?

**AMS** ▶ Never overlook an opportunity to learn from someone unexpected. Everyone has an axis of excellence. You have people who are wildly successful in a lot of spheres, and then there are some people you interact with that do one thing really well. It benefits you to study and learn from them, too.

Another big lesson: We think as a society that there are some people with that sort of bent, that they have "it" — the knack, the whatever, that the tinkers have. That they like math, that they're good at science. But there are many,

many people who are gifted in math and science that never execute, who never do anything with their talents.

You have to access people's motivation. If you can tap into someone's desire to create change, it's amazing what they can train themselves to do. You can put a challenge before smart people. You can give them the tools to execute. You can give them the team to help them execute. But nobody can dictate what a smart person does. You have to get to that motivation.

**OI** ▶ Do you think there is still something about America and the American character experience that gives us an edge when it comes to new innovations?

**AMS** ▶ Our nation is really good at producing innovators and innovations because we are able to attract people from all over the planet with that sort of derring-do. We can engage anybody from any socioeconomic level, any walk of life. What that means is that our teams, in whatever domain — engineering, entertainment, policy — tend to be very heterogeneous, and that's extremely powerful.

I also think people plant feet here because they like the rules. You're allowed to fail. Actually, failure is often a badge of honor. Look at the histories of great innovators; they're often pockmarked with failure.

There are no social strata, no presumptions. There are no expectations that you should stay in your box, your bin, your stratum. In fact, it's a point of pride for people that delta that gap of where you start and where you wind up. And it doesn't matter whether you have your degrees, whether you studied physics at Oxford or received your technical degree from DeVry, if you end up a billionaire because you make a product that everybody wants.

Very improbable people have done very improbable things in America. I like to say it's the club where people with ambition, derring-do and a desire to change things are welcome to join.

**OI** ▶ And if someone wants to join this club, what would you suggest they do first?

**AMS** ▶ If you want to go into a technology area with, metaphorically, guns blazing and really make a change, arm yourself with a good understanding of science, math and physics. Build strong engineering skills, because those skills give you a platform to create new processes and products that can profoundly change people's lives. ●

**“Know that it's better to fail at something of consequence than to work on something of no consequence.”**

— Ann Marie Sastry

### **WANT TO HEAR MORE FROM ANN MARIE SASTRY?**

If you visit the *Driving America* exhibition in Henry Ford Museum, slip into the theater and watch the 10-minute film about how the automobile has transformed our world. Sastry has several on-screen spots where she shares her thoughts about the car's impact on the world — past, present and future.

**DID YOU KNOW?** / *Forbes* named Ann Marie Sastry one of its Top 12 Women of Clean Tech.

#### **ONLINE**

OnInnovation's archived interviews, such as the one conducted with Ann Marie Sastry, along with related resources, can be accessed at [oninnovation.com](http://oninnovation.com). ▶

# THE BATTERY IS BORN

Battery: a device that produces electricity from a chemical reaction



**1748**

Benjamin Franklin coins the term "battery" to describe an array of charged glass plates.

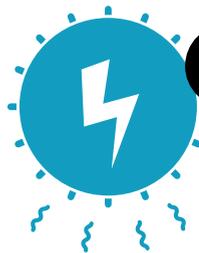


**1959**

The alkaline battery goes commercial thanks to Eveready Battery Co.

**1960**

Rechargeables are here; first made of nickel-cadmium.

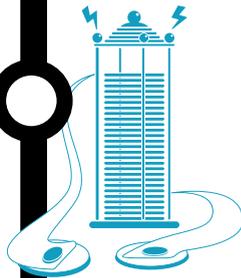


**1954**

The first solar battery converts the sun's energy into electricity.

**1798**

Alessandro Volta invents the first battery. It's a stack of zinc, acid-moistened cardboard and copper that holds a current.



**1901**

Thomas Edison invents the alkaline storage battery. Believe it or not, Edison makes more money from his battery inventions than the light bulb.

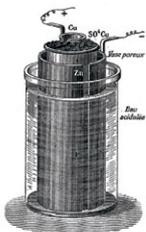
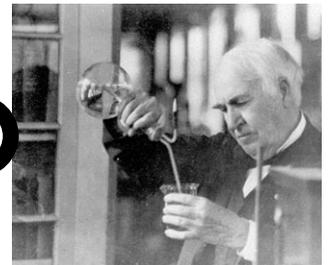


Fig. 84. — B&Ement Daniell.

**1836**

The Daniell Cell comes along and can hold a current longer than Volta's creation. This cell ends up powering household items for more than 100 years.

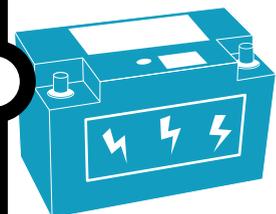


**1888**

The dry-cell battery enters the scene; it's similar to the carbon-zinc batteries of today that we throw in our flashlights, TV remotes and toys.

**1859**

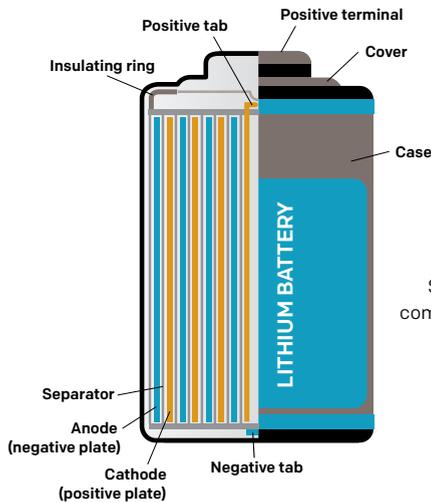
We get a look at the first lead-acid battery. It's still under car hoods today.



Make  
History

## ANN MARIE'S ADVICE FOR BUILDING YOUR TEAM

- 1 Make teaching a core value.**  
From the newest hire to the most senior person on staff, everyone has skills and knowledge that can benefit others in their work. Teaching what you know, and do, is an essential part of working with others — support your team to do this.
- 2 Make learning a core value.**  
Every member of a team must learn in order for the team to accomplish things that have not been done. Support your team to learn what is happening in your industry, or larger organization, and most important, what the world needs from your industry or organization.
- 3 Enunciate your values and rules.**  
Industry, government and academia are all different — they offer different things to the world, and they run by different sets of rules. Know yours, and your core values, and enunciate them to your team and to your partners.
- 4 Be the change.**  
Every time you ask someone to change, or you try to do something that changes the world, you must change as well. So change and improve, without ego — you, like your team, are a work in progress.
- 5 Walk the talk.**  
No one's perfect, but recognize that as a leader, you set the tone — ethics, technical work, interpersonal interactions. You'll make mistakes, and when you do, fix them, just as quickly and transparently as you want your team to fix their mistakes.



1992

Say hello to the first commercially available lithium batteries.



TODAY

Move over zinc and carbon, nickel and cadmium, innovations in rechargeable techs bring us nickel-metal hydride.

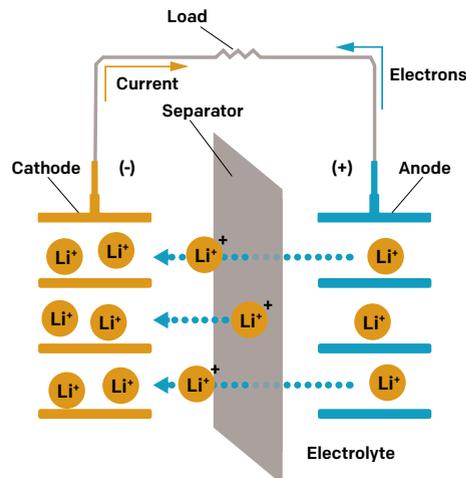
## POWERING TOMORROW?

Solid-state lith, thin-film, carbon nanotubes, printable paper batteries, perhaps?

### BATTERY BASICS

A battery has three parts. An anode (the negative plate), a cathode (the positive plate) and the electrolyte (the medium in between that allows the flow of electrical charge).

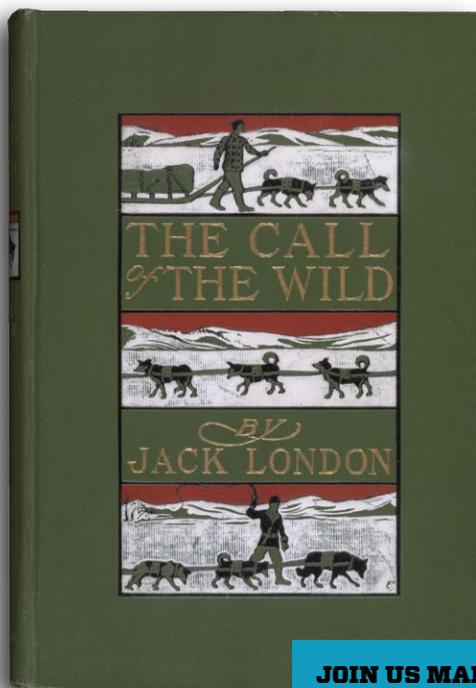
A battery works by immersing the negative and positive plates, which are made of different metals, into the electrolyte. The reaction in the anode creates electrons, and the reaction in the cathode absorbs them. The net product is electricity.



BEN FRANKLIN COURTESY OF THE LIBRARY OF CONGRESS — LC-USZ62-90398, DANIELL CELL COURTESY OF VUIBERT EDITIONS, THOMAS EDISON AND COLUMBIA DRY BATTERIES POSTER FROM THE COLLECTIONS OF THE HENRY FORD, ICONS BY MARINKO MILOSEVSKI, AND LITHIUM CUTAWAY AND BATTERY BASICS ILLUSTRATIONS BY RICK MILLS.

# The Call of the Wild

**NARDINA MEIN, MANAGER, ARCHIVES & LIBRARY, REVIEWS JACK LONDON'S CLASSIC**



Last year, The Henry Ford staff collaborated with the Dearborn Public Library to write a grant for a program called The Big Read. This program funds public libraries and community organizations to support literacy education and encourages a whole community to read the same book together. Our grant was approved, and The Big Read Dearborn was funded for 2014.

*The Call of the Wild* by Jack London was at the front of the pack when the National Endowment for the Arts was selecting books for our Big Read. We were excited. *The Call of the Wild* is one of few books that have made literary history and remains a riveting read today. Set during the 19th-century Klondike Gold Rush, it tells the story of Buck, a dog stolen from life on a California farm and sold to labor on the arctic trails as a sled dog, where he becomes a master of the trail and a leader of sled dog teams. After many challenges and struggles, Buck's yearning to return to the forest becomes overwhelming, and he chooses to answer the call of his ancestors, leading a wild wolf pack into the forest. He is remembered as the Klondike wolf dog of American Indian legend, and his deeds of strength and bravery are told around campfires far into the future.

During the summer of 1903, *The Call of the Wild* was published as a serialized novel in *The Saturday Evening Post*. Later that year, Macmillan published the complete hard-cover novel. It has been in print and available ever since and continues to be celebrated as a classic American adventure story. Part of the novel's lasting appeal rests in the realistic, passionate characterizations that were new to American audiences of the time. Jack London's work opened a new era of American literature and was a forerunner of Ernest Hemingway's spare and elegant writing style. This use of language perfectly expresses the broad themes of nature and civilization, survival of the fittest and mastery of the environment in *The Call of the Wild*.

## JOIN US MARCH 8, 2014

The Big Read adventure begins with a kickoff party in The Henry Ford's Anderson Theater on March 8. All are invited — the event is free and open to the public. Come pick up a complimentary copy of *The Call of the Wild*, and enjoy music, movies and activities. For more information about Big Read and other springtime activities happening around town in conjunction with the program, visit [bigreaddearborn.org](http://bigreaddearborn.org).

*"The Call of the Wild is the greatest dog story ever written and is at the same time a study of one of the most curious and profound motives that play hide-and-seek in the human soul."*

— **Carl Sandburg**, *Jack London: A Common Man*

## ONLINE

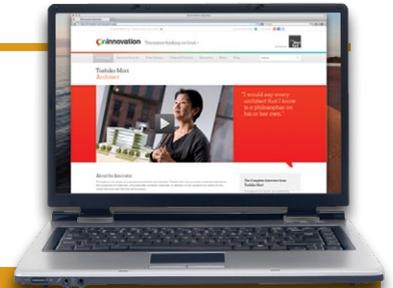
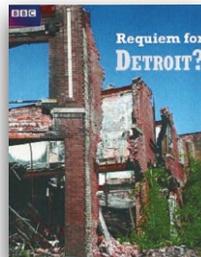
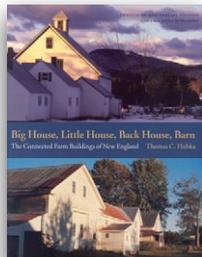
You can find this object from the Collections of The Henry Ford at <http://collections.thehenryford.org/Collection.aspx?objectKey=374447> ▶



THE CALL OF THE WILD. NEW YORK: MACMILLAN, 1903. COURTESY OF BOOKS THAT SHAPED AMERICA EXHIBITION. OLIVER WENDELL HOLMES LIBRARY COLLECTION, RARE BOOK AND SPECIAL COLLECTIONS DIVISION, LIBRARY OF CONGRESS (038.00.00); BOOKPLATE OF AUTHOR JACK LONDON, CIRCA 1905. FROM THE COLLECTIONS OF THE HENRY FORD

# What are we reading + watching?

► Visit [oninnovation.com](http://oninnovation.com) and watch Toshiko Mori's OnInnovation oral history along with many others.



**Jim Johnson**  
Senior Manager,  
Creative Programs  
The Henry Ford

## Call the Midwife

Written by Heidi Thomas,  
Produced by Neal Street  
Productions-Sam Mendes

The BBC series *Call the Midwife* is one of the most compelling, dramatic and emotional stories I have encountered. Set in the late 1950s in East End London, the series centers around nurse midwives and nuns of Nonnatus House. Before modern birth control (namely the pill), these women delivered up to 100 babies each month. The depiction of the time period is flawless, and the engaging storytelling taps every emotion.

Recent series like *Call the Midwife* and *Mad Men* illustrate how different life was compared with today. Even though 1960 is considered modern age, attitudes toward women, race, health and other issues were far from modern.

Read Jennifer Worth's memoirs — which *Call the Midwife* is based upon — and watch the show's third season, which airs on PBS in January.

**Jim McCabe**  
Collections Manager,  
Curator of Buildings,  
Acting Curator of  
Agriculture  
The Henry Ford

## Big House, Little House, Back House, Barn

By Thomas C. Hubka

The beauty of Tom Hubka's *Big House, Little House, Back House, Barn*, one of my favorite books, is the manner in which he takes a comprehensive, interdisciplinary look at the iconic connected farmsteads of northern New England to create a broad understanding of the people who built, lived in and worked in these buildings.

Hubka combines a detailed architectural analysis with careful examinations of the differing uses of space in and around the farmsteads. He paints a detailed portrait of these northern New England farms and the families who lived on them by outlining the seasonal patterns of agricultural and non-agricultural work.

Northern New England in the 1800s was a harsh and unforgiving region; these connected farmsteads represented a specific strategy to survive and thrive in that place and time.

**Clara Deck**  
Senior Conservator  
The Henry Ford

## Requiem for Detroit?

Produced by Julien Temple

This BBC documentary aired in 2010 in Britain on BBC2 and more recently in the U.S. on the Documentary Channel.

Leave it to British punk documentarian Julien Temple to produce the best overview of the demise and resilience of the greatest Rust Belt city — with a truly kicking soundtrack of mostly Detroit music.

There are trenchant insights and refreshing perspectives from social activist Grace Lee Boggs, rocker Mitch Ryder and beat poet John Sinclair.

It juxtaposes beautifully, if at times stridently, the American dream against a reimagined “post-industrial 21st century.”

If you are curious about how Detroit's Packard plant and Highland Park Chrysler plant look today, this is the film for you.

## A LIST

Since we're talking about women who rock in music and industries beyond in this issue, we pulled together a hit list of papers, books and photos on our shelves that you might find of interest. (There's an even bigger list when you download the magazine's free tablet edition on iTunes and Google Play.) Lots of this stuff is in THF's archives. Benson Ford Research Center can help with access. Write to us at [research.center@thehenryford.org](mailto:research.center@thehenryford.org).

### ARTS AND ENTERTAINMENT

**Jenny Young Chandler photographs, 1890-1915**  
Archival collection

**Eva Tanguay Papers, 1892-1947**  
Archival collection

**She's a Rebel: The History of Women in Rock & Roll**  
Book

**Our Favorite Quiltmakers: Susan McCord**  
Book

**BUSINESS**  
**Martha Stewart OnInnovation oral history**  
[oninnovation.com](http://oninnovation.com)

**On Her Own Ground: The Life and Times of Madam C.J. Walker**  
Book

**DESIGN**  
**Suzanne Vanderbilt Papers, 1958-1986**  
Archival collection

**Toshiko Mori OnInnovation oral history**  
[oninnovation.com](http://oninnovation.com)

**Women Designers in the USA, 1900-2000: Diversity and Difference**  
Book

### FLIGHT

**Flying High: Pioneer Women in American Aviation**  
Book

**Her Mentor Was an Albatross: The Autobiography of Pioneer Pilot Harriet Quimby**  
Book

**Soaring Above Setbacks: The Autobiography of Janet Harmon Bragg, African American Aviator**  
Book

**RACING AND DRIVING**  
**Eat My Dust: Early Women Motorists**  
Book

**Lyn St. James OnInnovation oral history**  
[oninnovation.com](http://oninnovation.com)

**Fast Women: The Ladies of Auto Racing**  
DVD

**STEM (SCIENCE, TECHNOLOGY, ENGINEERING AND MATHEMATICS)**  
**Clara Barrus Papers, 1909-1927**  
Archival collection

**Patently Female: From AZT to TV Dinners, Stories of Women Inventors**  
Book



# WANT MORE?

The free tablet edition of the latest issue of *The Henry Ford Magazine* is available in January 2014 on iTunes and Google Play for iPad and Android tablets.



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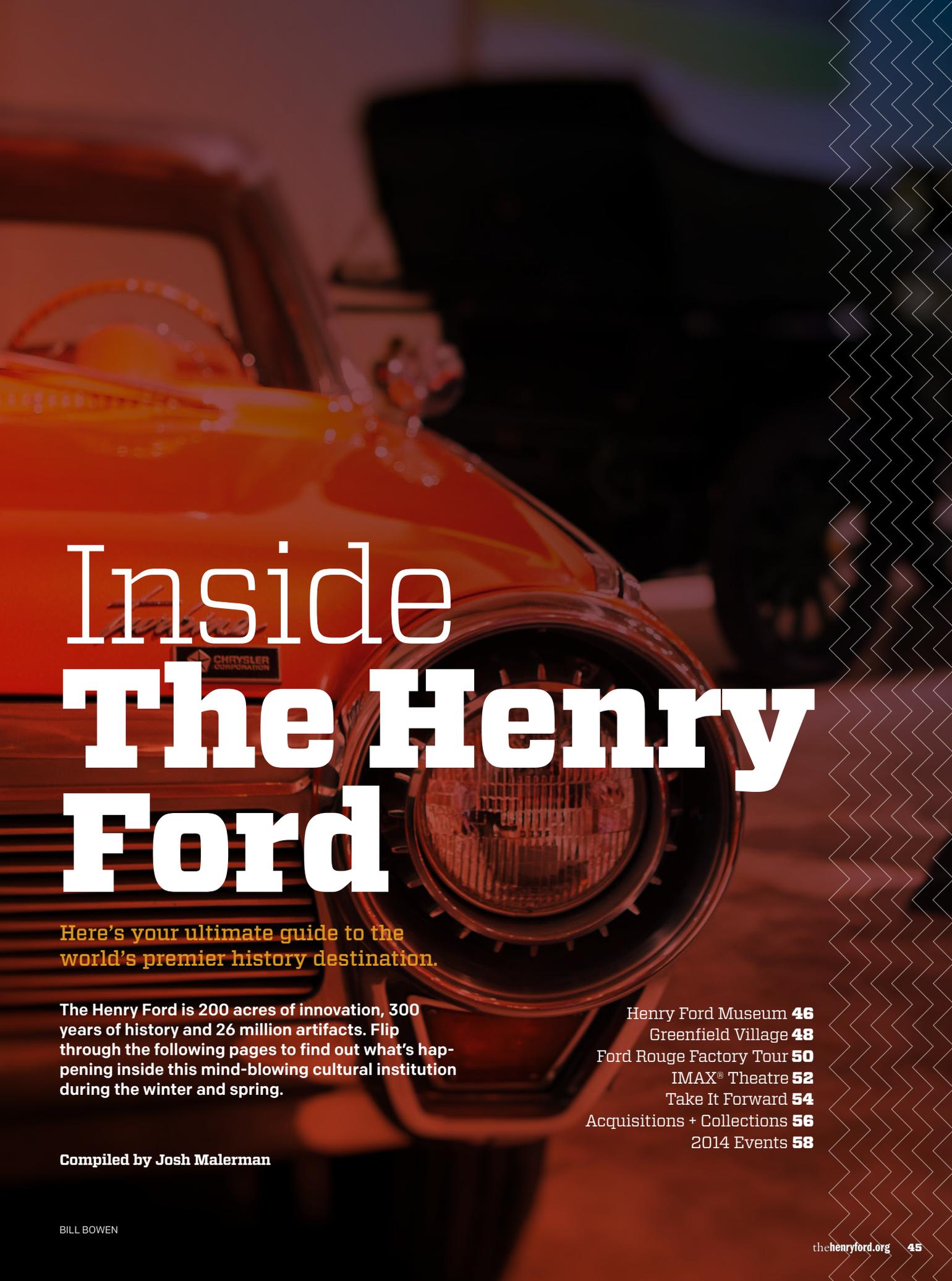
**CURIOUS ABOUT HOW TO ADVERTISE IN THE HENRY FORD MAGAZINE'S NEWSSTAND AND/OR DIGITAL EDITIONS?**

Contact Sherri Howes, 313.982.6028 or [SherriH@thehenryford.org](mailto:SherriH@thehenryford.org).

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visit [thehenryford.org](http://thehenryford.org)



# 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.

Compiled by Josh Malerman

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# Make Something on a Saturday

Inventors of all ages, of all skill levels, bring ideas and create

## Henry

Ford's fascination with invention extended far beyond his work on the automobile and his close personal relationship with Thomas Edison. The enthusiasm with which he approached history is now legendary, exemplified by what you'll find inside Henry Ford Museum.

Presidential limousines that once carried the nation's leaders, the earliest airplanes used to pioneer the sky, the bus in which Rosa Parks made her stand, the chair Abraham Lincoln was sitting in the dark evening he was shot. As monumental as these artifacts are, the museum has thousands of others just as riveting, just as relevant.

Spread over several indoor acres, the museum comes as close as possible to housing its namesake's primary obsession: making things. It's no secret Ford enjoyed clocks, phonographs and steam engines, but to quantify his interests would be an exercise

in futility. The Henry Ford has long stood as a repository for America's most inventive minds' gifts to the globe. So there's no better-suited place to host a monthly celebration of those who get geeked about creating something from nothing. Like you.

Makers, builders, tinkerers and doers of all ages, know-how and backgrounds can congregate at the museum for Tinker. Hack. Invent. Saturdays. These take place every Saturday and feature the kind of people and things Ford would have marveled at. It's a chance to hear firsthand how makers do what they do and why, in many cases, it's important to always persevere, no matter how many times you might fail in the middle.

Activities change; sometimes it's a hands-on affair, other times it's a thrilling presentation. But one thing is surely consistent: Henry Ford himself would have loved to see all the apparatuses, gadgets, doodads and discoveries that have come after him, all of which were inspired in part by Ford's own love of invention.

**ONLINE** For more information, hours and pricing, visit [thehenryford.org/museum](http://thehenryford.org/museum) ▶

**WANT MORE TO TINKER WITH?**  
Subscribe to **THF OnMaking** at [thehenryford.org/enews](http://thehenryford.org/enews) ▶



► Kids are free to experiment, create and build their DIY skills every Saturday during Tinker. Hack. Invent.



#### THE ROBOT GARAGE

If Tinker. Hack. Invent. Saturdays in Henry Ford Museum leave you wanting more time to tinker, hack and invent, there's always the Robot Garage (RG) in Birmingham, Michigan. It was created with the intention of building a "year-round place for LEGO® and robotic enthusiasts of all ages." The Henry

Ford met up with the RG at the 2013 Maker Faire® Detroit and is planning additional appearances together.

The Henry Ford is an ideal setting for spreading RG's message (which actually mimics the mission of The Henry Ford). As [therobotgarage.com](http://therobotgarage.com) so perfectly states: "There is no telling who

from our own communities will carry the brightest torches into the 21st century." A sentiment Henry Ford himself would appreciate.

#### SAVE THE DATE!

**February 22, 2014** Robot Garage will be at The Henry Ford ►

# A Glowing Example

Sarah Jordan, a mother, a widow, a savvy businesswoman in the 1800s

It

seems incredible to imagine one place that houses a courtroom Abraham Lincoln once argued in, a laboratory where Thomas Edison experimented with electricity, the cycle shop where the Wright

brothers conjured up a flying machine, the Connecticut home of Noah Webster (yes, as in the Merriam-Webster dictionary you can buy at Barnes & Noble today), and a modest cabin dedicated to the life and work of soil scientist/inventor George Washington Carver. And, to take it a step further, let's add a functioning steam engine train, an antique carousel you can ride and restaurants that adhere entirely to the rules of the era they represent.

It doesn't sound possible, yet it is. It's Greenfield Village, the incredible manifestation of one of Henry Ford's finest ambitions: to gather, in one accessible area, not only historically significant buildings but places where great things happened because of the ideas, ingenuity and hard work of some great people. Like Sarah Jordan.

In the 1870s, Sarah ran a converted six-bedroom duplex turned boardinghouse for Thomas Edison's unmarried employees who were looking for a place to call home near Menlo Lab where they worked. Imagine the boarders, up to 16 at a time, lounging in the house, debating about how to make Edison's

ideas on paper into prototypes, excitingly arriving at plausible conclusions or simply playing cards and nodding off.

Sarah had lost her husband the year before she agreed to take on the duties of the boardinghouse and caring for strangers. She needed income, yes, or maybe it was in the interest of her 10-year-old daughter, Ida — wanting to set the best example of industrious hard work at her feet. Imagine how Ida must have marveled as the home where she lived — one of the first to be lit by Edison's incandescent light bulb — began to glow.

Sarah, because of circumstances beyond her control, had to tap her entrepreneurial spirit, risk the unknown and start anew. At a time when job opportunities for women were nil, she became a businesswoman, a headmaster of a house (full of men she didn't know) as well as head and sole breadwinner of her family.

Sarah Jordan's boardinghouse is in Greenfield Village in the Edison at Work District. It is preserved and ready for visitors to walk through and appreciate. Marvel at the rudimentary wiring and lighting in the rooms. But more important, let the house and Sarah's story provoke conversations about entrepreneurship, conquering hardship and the leadership roles women had way back then in family and business compared with now.

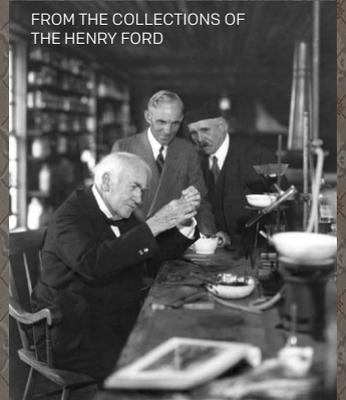
**ONLINE** For more information, hours and pricing, visit [thehenryford.org/village](http://thehenryford.org/village)



► Hear Sarah Jordan's story of entrepreneurship as you stroll through her boardinghouse — one of the first structures to be lit by Thomas Edison's light bulb.



FROM THE COLLECTIONS OF  
THE HENRY FORD



#### A VIEW FROM HIS ROOM

Francis Jehl started working at Thomas Edison's Menlo Park laboratory in February 1879 and later wrote about his experience. He lived at Sarah Jordan's boardinghouse and included memories of his stay in his book. Enjoy this excerpt:

"Where are you going to stay?" [asked Edison]

Now, I had come directly to the laboratory from the depot and had made no effort yet to find lodgings. I told him so.

"Go over there," he told me, "and talk to Mrs. Jordan."

... In a few moments I was introducing myself to a slight, frail little woman who was the proprietress. Business was not yet brisk and she was glad to see a new lodger. She escorted me up the narrow winding stairs and into a large room at the front of the house ... Board and room, I learned, were to cost five or six dollars a week.

I accepted the room at once and, after unpacking my satchel by candlelight and hanging up my clothes, went downstairs and took a seat in the dining room ... Supper was a bountiful meal with meat, vegetables and fruit forming the main dishes. The big meal of the day — dinner — was at noon when soup, potatoes and the pies, for which Mrs. Jordan was noted, were served. After the meal we sat for a time in the living room while Mrs. Jordan and her little ten-year-old daughter did the dishes in the kitchen just beyond.

Menlo Park Reminiscences by Francis Jehl. Published by the Edison Institute, Dearborn, Michigan (Copyright 1937-1941)

From left: Thomas Edison, Henry Ford and Francis Jehl

# Wanting It All

The Rouge, one man's idea, a nation's symbol of manufacturing

## Henry

Ford wanted it all when he built the Rouge complex in Dearborn. Autonomy through control of every aspect of production from raw materials to finished product. Vertical-integration

production. Why depend on suppliers to transform my raw materials into steel, rubber and glass, he asked, when I can do it myself? Why worry about the cost of electricity to run everything, when I can build my own power plant and generate what I need?

And he did.

The Rouge's production history stands as a hallmark of the times. From tractors to cars, then as World War II arrived, jeeps, tank engines and even amphibious vehicles. After four decades of the Ford Mustang, the Rouge is now the place of origin for the award-winning Ford F-150. And much more. Like the world's largest living roof.

The story of the Rouge becomes extra-meaningful when you experience Henry's vision come to life on film in the Legacy Theater.

A sweeping compilation of The Henry Ford's archival film footage, photographs and images spliced together by BRC Imagination Arts, a short film draws you into the dreams of Henry Ford.

You see him as a young man in a small shed on Bagley Avenue in Detroit with an idea about making cars affordable and creating a way to make more of them faster than anybody else. You learn how Ford's desire to mass-produce the automobile evolves into a new, more audacious dream for a self-contained factory that can transform raw materials into engine blocks in 24 hours, cars within 72. You watch as the Rouge, one of the single most complex "machines" in the world, struggles through the Great Depression, welcomes women to work the assembly line during World War II, reluctantly accepts the rise of workers' unions, and responds to turning points such as the oil crisis and rise of the imports.

In the Legacy Theater, we're all reminded of the incredible history that took place at the Rouge and how Henry Ford's soaring ideas became actualities that helped define American manufacturing and industry. And the Rouge is still doing so today by developing and applying some of the most advanced, sustainable and responsible manufacturing practices in the world.

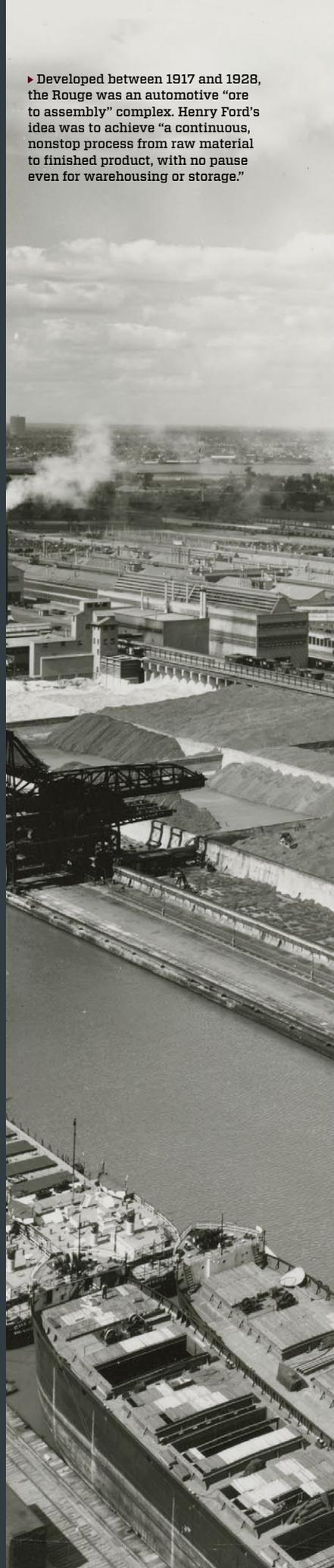
**ONLINE** For more information, hours and pricing, visit [thehenryford.org/rouge](http://thehenryford.org/rouge) ▶



### DID YOU KNOW? /

The music you hear in the Legacy Theater was written and performed by the Detroit Symphony Orchestra for the film and main gallery of the Ford Rouge Factory Tour.

▶ Developed between 1917 and 1928, the Rouge was an automotive "ore to assembly" complex. Henry Ford's idea was to achieve "a continuous, nonstop process from raw material to finished product, with no pause even for warehousing or storage."





The Rouge initially produced submarine chasers, or eagle boats, then tractors. The Model A was the first car produced there, beginning in 1927.

# A Teller of Stories

Toni Myers: writer, editor and producer of multimillion-dollar IMAX films

A

giant movie screen measuring 85 feet wide and 62 feet high provides a lot of room to tell a story. Everybody knows the classic, museum-based IMAX theaters like The Henry Ford's are true

to form in every conceivable way, with newer digital technologies not even coming close to encapsulating the IMAX experience.

Why is this so? The answer lies in the IMAX film stock — a 15-perforation/70mm negative (commonly referred to as 15/70) — and the filmmakers that use it as their canvas. Nothing looks better on the giant screen than spectacle, whether it's superhero action, science-fiction fare or the reigning queen of awe: Mother Nature. Also, the people who know how to capture the latter understand that the IMAX film format implicitly allows for deeper looks. It literally transports the viewer to places one cannot normally go, whether it's a trip to the International Space Station or a dive beneath the ocean's surface. You feel as if you are a part of it, that you are actually at those places.

Since the inception and ascension of IMAX in 1971, women have been a part of its legacy. Like Toni Myers.

Toni is one of the best. A legend in the IMAX world, Myers has edited, written and produced some of the most critically acclaimed IMAX documentary films ever made. But *Deep Sea 3D*, *Under the Sea 3D*, *Space Station 3D* and *Hubble 3D* — films that have played at The Henry Ford — were just indecipherable glimmers in her eye when she began her career. Working for CBC-TV, Apple Inc. and the BBC, Myers first mastered editing on television

dramas and documentaries before a once-in-a-lifetime opportunity working on Graeme Ferguson's epic *Polar Life* opened her eyes — and her career — to IMAX and 15/70 films. (Ferguson is co-founder/co-inventor of IMAX Corp., by the way.)

Not content to just be a part of the IMAX pack, Myers drew from her own creative spirit and spunkiness to become the first person to produce, write and edit a 15/70 3D film shot in space. Her film, *Space Station 3D* (2002), grossed more than \$120 million and won the Giant Screen Cinema Association's Best Film Award. She also received a Silver Snoopy Award from NASA astronauts for giving general audiences a never-seen-before glimpse of space.

Anyone who has seen a movie can appreciate how much of their entertainment is owed to the efforts of the editor, whose style can dictate the pace, patterns and moods of a motion picture. In this way, Toni Myers and IMAX were made for one another — both aware of the implicit drama in the natural universe and the awesome power of 15/70 film on the IMAX screen.

#### FILMS AT THE HENRY FORD IMAX THEATRE THROUGH JANUARY 26

- Avatar Special Edition: An IMAX 3D Experience
- Flight of the Butterflies 3D
- The Hobbit—The Desolation of Smaug: An IMAX 3D Experience
- Rocky Mountain Express

Watch for opening events at [thehenryford.org](http://thehenryford.org).

**ONLINE** For more information, hours and pricing, visit [thehenryford.org/imax](http://thehenryford.org/imax)



► Director Howard Hall (left) and cameraman Bob Cranston sneak up on a green sea turtle while filming Toni Myers' *Deep Sea 3D*.

© 2005 WARNER BROS. ENTERTAINMENT INC. PHOTO: PETER KRACH





## TONI MYERS TALKS

"It has often been said that IMAX takes people to places most can't go themselves. But a few adventurers actually DO that exploring for us. I continue to be in awe of the amazing achievements of every astronaut crew working in space, as well as of Howard and Michele Hall and their team diving the oceans. They're all incredibly talented, creative, inventive, funny and great to work with. I'm inspired by them and lucky to be a part of anything they do."

- Toni Myers

**The Henry Ford asked Toni Myers to share a few of her most unexpected and inspiring moments. Here are two recollections, both experienced while filming *Space Station 3D*, that she says continue to stay with her.**

### THE CALL

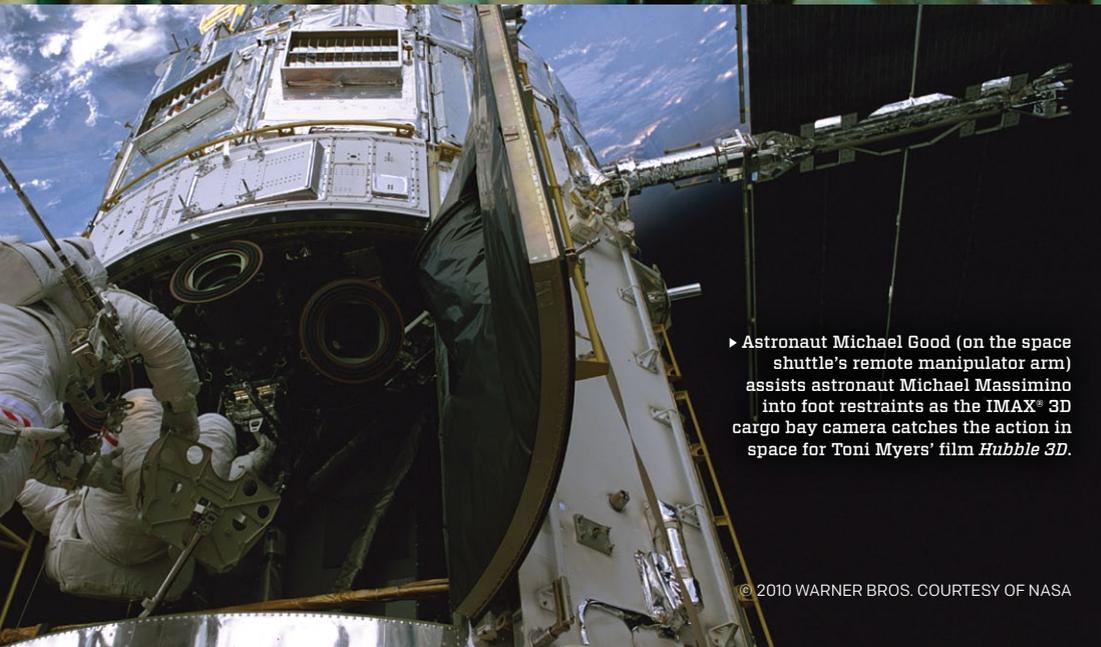
Way too early one morning, I snapped a cranky hello into my ringing cellphone, only to discover it was an astronaut — calling from the space station — to ask me about shooting a scene. Needless to say, I was pretty much speechless.

### THE ROCK

While we were filming a Proton rocket launch in Kazakhstan, a rock crashed through the glass housing of our IMAX® 3D camera housing. I thought I had just trashed a million-dollar camera and would be spending the rest of my life in the desert with the prairie dogs. However, James Neihouse, our director of photography, had put a filter in front of the lens and the rock hit the filter and dropped harmlessly to the camera's bottom. Not only did we get the shot, the shattering glass made for a spectacular 3D effect. Later in theaters, during the shattering launch shot, I saw people take off their 3D glasses and inspect them, as if to find out what had happened.

### DID YOU KNOW? /

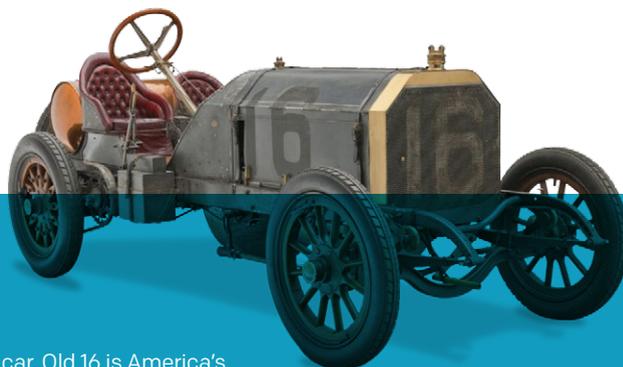
The Henry Ford IMAX Theatre sold more than 150,000 tickets for Toni Myers' IMAX films, including *Blue Planet* (1992), *Destiny in Space* (1994), *Space Station 3D* (2002), *Deep Sea 3D* (2006), *Under the Sea 3D* (2009) and *Hubble 3D* (2010).



▶ Astronaut Michael Good (on the space shuttle's remote manipulator arm) assists astronaut Michael Massimino into foot restraints as the IMAX® 3D cargo bay camera catches the action in space for Toni Myers' film *Hubble 3D*.

# Take It Forward

BOLD IDEAS SHAPING OUR WORLD



## Ready, Set, Go

Things that make us go vroom

### SWEET SIXTEEN ▶

Not the age, the famous race car. Old 16 is America's first automobile to win an international auto race. Way back in 1908. Still running. Original, not restored. *Driving America, Henry Ford Museum*

ALL THREE IMAGES FROM THE COLLECTIONS OF THE HENRY FORD

## Wonder Women

Give it up for some female superheroes



### ◀ THE I DON'T CARE GIRL

Eva was bold, confident and didn't care what people thought. A singer, comedienne, a symbol of a newly emancipated American woman in the 1900s.

*The Eva Tanguay Papers, Benson Ford Research Center*

EVA TANGUAY AND LILLIAN BOYER FROM THE COLLECTIONS OF THE HENRY FORD

## Let's Play

Fun toys for girls and boys



ROY RITCHIE

### ◀ HOOP IT UP

No matter in sundress or trousers, use the stick to make the wooden hoop go faster and faster.

*Historic Games on the Green, Greenfield Village*

## AUTOS COME IN ALL SHAPES AND SIZES

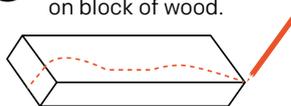
Walk through the *Driving America* exhibit in Henry Ford Museum, and you'll find automobiles of all shapes and sizes. Use this simplified how-to of a time-honored tradition to get you started constructing your own miniature mode of transportation.

**b** Download and print The Henry Ford's set of derby car decals from [blog.thehenryford.org/the-henry-ford-freebies/](http://blog.thehenryford.org/the-henry-ford-freebies/)

**1** Purchase a pinewood derby kit at your local craft store.



**2** Trace car template on block of wood.

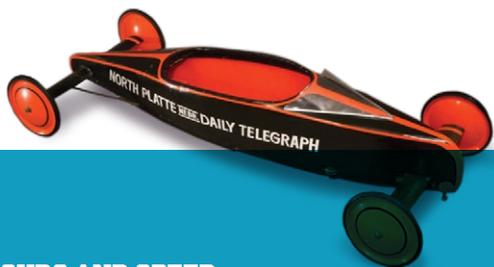


**3** Cut block to follow template.



**4** Prepare axle slots using zinc nails for both front and rear axles.





### SUDS AND SPEED ▶

When a newspaper photographer saw a group of boys racing down a hill in soapboxes on baby carriage wheels, an idea was born.

*1939 Soapbox Derby Car,*  
The Henry Ford Collection

### JUMP IN! ▶

Lyn St. James wore this ensemble circa 1985 when she was competing against men in top professional car races worldwide. Seven Indy 500 starts in nine years and the first woman to win the 500's Rookie of Year title. Not bad.

The Henry Ford Collection



### ◀ FLYING HIGH

Lillian Boyer wasn't scared, and when she performed in the air, hanging by her teeth from an airplane, she produced more thrills a minute than any other aerial artist.

*Heroes of the Sky,*  
Henry Ford Museum



BILL BOWEN

### ◀ A LUCKY STAR

Madonna may be today's quintessential pop music megastar, but her style, mannerisms and personality are gender-bending trends in their own rights. Join her in a music video.

*Your Place in Time,*  
Henry Ford Museum



### TO THE FINISH ▶

Part model, part artwork, part Americana of the 1930s. A spindizzy is for every kid that wants to turn the backyard into the Brickyard.

The Henry Ford Collection



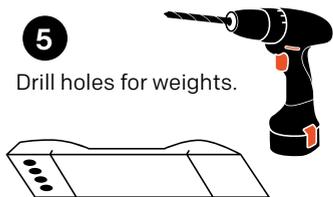
### BARBIE MILLCENT ROBERTS ▶

Born in 1959. A 17-year-old teenage fashion model. A maverick, a trendsetter, an icon for girls everywhere. Never just a doll.

The Henry Ford Collection

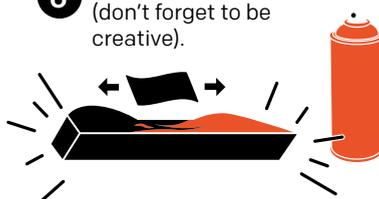
5

Drill holes for weights.



6

Sand, seal and paint (don't forget to be creative).



7

Put wheels on axles, mount on car. You're ready to race.



"I wanted to devise a wholesome, constructive activity that would ... promote craftsmanship and good sportsmanship through competition."  
— Don Murphy, inventor of the pinewood derby. Find his book and more on how to build your own pinewood derby car at [pinewoodpro.com](http://pinewoodpro.com).

# Playhouse for Ideas

The IBM World's Fair Kiosk, where technology was once celebrated and new stories will be told

## Henry

Ford Museum is filled with design. Automobiles, trains, toys, furniture. Work by Herman Miller designers such as Gilbert Rohde, George Nelson and Charles and Ray Eames has long

been integrated into the museum's *Fully Furnished* exhibit. And a digital collection gives you even more pieces to ponder online.

The Henry Ford's connection to the dynamic design duo of Charles and Ray Eames — creators of the famous Eames lounge chair and ottoman — is now a bit stronger with the recent artifact acquisition of the 1964 New York World's Fair IBM Kiosk the two designed. A hulking name, it may be, but the kiosk is anything but hulking when seen. It's colorful, light and welcomes you to come on under its canopy and look up — the exquisite floral arrangement designed by Ray in the center will warm you.

"It's a powerful and appealing artifact. A reminder that Charles and Ray Eames could apply lightness of touch and whimsy to serious yet fun exhibit design," said Marc Greuther, The Henry Ford's chief curator.

The kiosk has a story to tell. It's one of two known to survive, barely escaping

being demolished at the end of the 1964 fair. A contractor hired to do the destruction decided to save it. During the fair, it stood inside IBM's pavilion with its intriguing "egg" atop. Through the various exhibits inside, IBM was attempting to explain that computers could be highly beneficial to people, user-friendly and not a threat. Hard to imagine such persuasion was ever required. The kiosk drew fairgoers underneath with exhibits and interactives where they could learn about a variety of computing technology and functions.

When you look at the kiosk acquired by The Henry Ford, it suggests carnival, carousel or bandstand architecture. It would appear that the Eameses' lighthearted design was part of a larger strategy to charm and welcome guests, to soften the "hard" computer technology being demonstrated inside.

The Henry Ford is reconstructing the kiosk in Henry Ford Museum and will possibly use it as a showcase area for other new acquisitions that come to The Henry Ford, said Greuther. A fitting new purpose for a structure originally designed to draw attention to new ideas in computing technology.

**ONLINE** For more information about the collections of The Henry Ford, visit [collections.thehenryford.org](http://collections.thehenryford.org) ▶

**INSPIRED BY COOL OBJECTS?**  
Subscribe to **THF OnDesign** at [thehenryford.org/enews](http://thehenryford.org/enews) ▶

### 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.





© EAMES OFFICE LLC, 2013

▲ During the 1964 World's Fair (above), the kiosk drew guests underneath to learn more about computing technology. The Henry Ford conservators are busy restoring the piece for display in Henry Ford Museum.



© EAMES OFFICE LLC, 2013

### HALF OF A WHOLE

Ray Eames and husband Charles rose to prominence in an era and an industry where men stood out with their achievements and the accomplishments of female counterparts were often ignored.

Trained as a painter and sculptor, Ray loved pattern and design — her California office at 901 Washington Blvd. was filled with drawers of colorful papers as inspira-

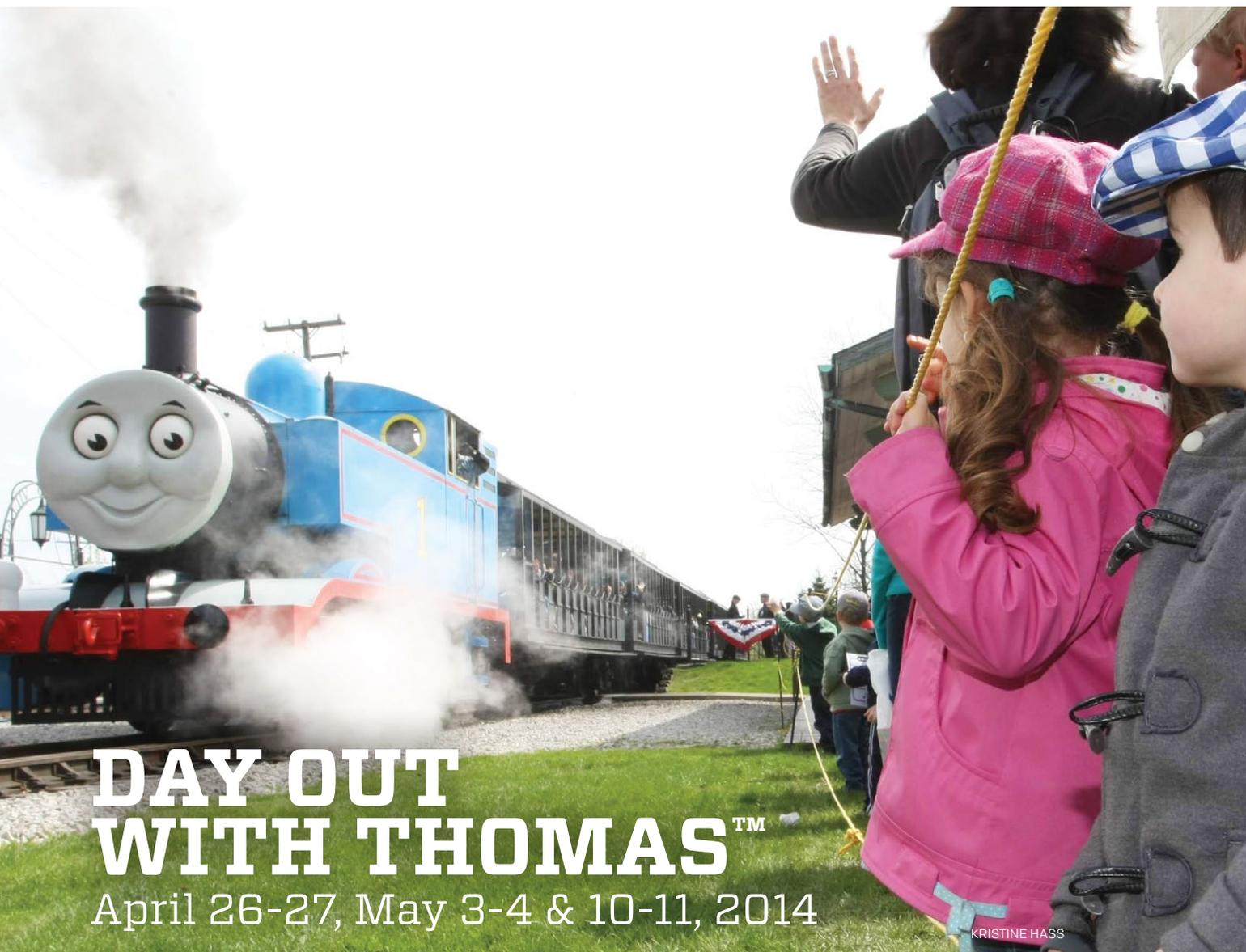
tion for the next project. Every design element was purposeful. Whether it be a fabric selection for a chair or the flower arrangements she placed on her own dining room table at home, every choice was scrutinized, every detail considered. Ray never did things just to do them — she did it as part of a grander vision. Free time was never spent watching television or hanging out. It was time

to start the next project or research new inspiration.

With every piece of furniture Ray and Charles created, each model was better than the previous. They worked independently and together to find just the right combination of materials in their finished products. And Charles always found a way to publicly highlight Ray and validate her crucial role in all components Eames.

# 2014 Events

Celebrate.  
Play.  
Imagine.



## DAY OUT WITH THOMAS™

April 26-27, May 3-4 & 10-11, 2014

KRISTINE HASS

Engineers big and small can come to Greenfield Village and let off a little steam with everyone's favorite steam engine — Thomas the Tank Engine™. Along with being pulled around the village track by Thomas himself, see Sir Topham Hatt™, hear enthralling stories of friendship and teamwork, and enjoy some live toe-tapping tunes.

If you love the classic book series, watch the much-loved TV series *Thomas & Friends* or often step over your little one's Thomas toy models scattered on the living room floor, come with your crew and spend a memorable spring day at Greenfield Village.

Day Out with Thomas™ is a friendly experience for families with autism. Key Greenfield Village staff members are trained in autism recognition and response, and environmental and sensory accommodations are available. See the helpful pre-visit guide at [autismallianceofmichigan.org/aaom-and-the-henry-ford](http://autismallianceofmichigan.org/aaom-and-the-henry-ford).

**ONLINE** visit [thehenryford.org/events/dayOutThomas.aspx](http://thehenryford.org/events/dayOutThomas.aspx) ▶



# WOMEN WHO ROCK: VISION, PASSION, POWER

May 17-August 17, 2014

COURTESY OF ROCK  
AND ROLL HALL OF  
FAME AND MUSEUM

*Women Who Rock: Vision, Passion, Power* shines a spotlight on the astounding women who propelled rock 'n' roll into uncharted territories. Key artifacts, videos, exclusive interviews and listening stations underscore the defining role that women have played in popular music, from the foremothers at the roots of rock to Grace Slick, Madonna and musicians of the new millennium.

Featuring more than 70 artists, the exhibit celebrates women as engines of creation and change in popular music, with iconic artifacts and nonconformist costumes such as Lady Gaga's meat dress worn at the 2010 MTV Music Video Awards show.

*Women Who Rock* was organized by the Rock and Roll Hall of Fame and Museum in Cleveland, Ohio, and is the first museum exhibit dedicated to almost a century of female musicians.

▲ Along with Lady Gaga's meat dress (center), see artifacts such as Madonna's *Blond Ambition Tour* bustier (top left) and Tina Weymouth of the Talking Heads' bass guitar.

**ONLINE** visit [thehenryford.org/WomenWhoRock](http://thehenryford.org/WomenWhoRock) ▶

# 2014 Events



KRISTINE HASS

► In honor of Rosa Parks, the National Day of Courage pays tribute to those making an impact on the world today through their acts of resourcefulness and courage. Join us on February 3, 2014, for a day of reflection and celebration as we hear from those shaping the present and inspiring a better future.

## YEAR-ROUND

### Macy's 2nd Mondays Children's Program

January 13, February 10, March 10, April 14, November 10, December 8  
Henry Ford Museum

May 12, June 9, July 14, August 11, September 8, October 13  
Greenfield Village

### Target Family Days

January 20, February 17, September 1, November 4  
Henry Ford Museum  
Presented by Target

### Tinker. Hack. Invent. Saturdays

Every Saturday  
Henry Ford Museum

## JANUARY

### James Cameron's AVATAR: The Exhibition™

Running through January 26  
Henry Ford Museum

## FEBRUARY

### Black History Month

February 1-3, 5-9, 12-16, 19-23 and 26-28  
Henry Ford Museum  
Presented by Ford Motor Company Fund

### National Day of Courage

February 3  
Henry Ford Museum

### Local Roots Evening Dining\*

February 7 (Henry Ford Museum)

## APRIL

### Local Roots Evening Dining\*

April 14 (Eagle Tavern, Greenfield Village)

### Day Out With Thomas™\*

April 26-27, May 3-4 and 10-11  
Greenfield Village

Locally sponsored by Michigan Education Savings Program

### Railroader's Breakfast\*

April 26-27, May 3-4 and 10-11  
Greenfield Village

## MAY

### Outdoor Living Lab Tour\*

May 1-October 11  
Ford Rouge Factory Tour



RUDY RUZICKA

### Local Roots Evening Dining\*

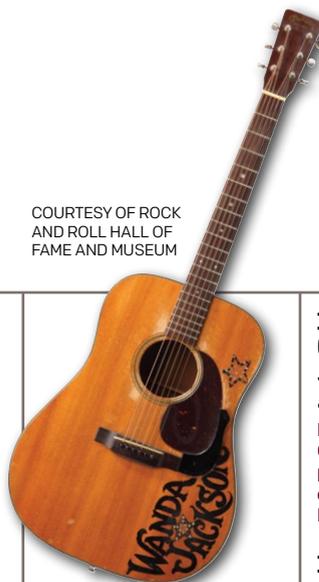
May 2 (Eagle Tavern, Greenfield Village)

### Day Out With Thomas™\*

May 3-4 and 10-11  
Greenfield Village

### Railroader's Breakfast\*

May 3-4 and 10-11  
Greenfield Village



COURTESY OF ROCK AND ROLL HALL OF FAME AND MUSEUM

### Mother's Day Brunch\*

May 11  
Lovett Hall, The Henry Ford

### Women Who Rock: Vision, Passion, Power Preview\*

May 15 (Henry Ford Museum)

### Women Who Rock: Vision, Passion, Power

May 17-August 17  
Henry Ford Museum

### Civil War Remembrance

May 24-26 (Open Saturday 'til 9 p.m.) (Greenfield Village)



MICHELLE ANDONIAN

## JUNE

### Women Who Rock: Vision, Passion, Power

Running through August 17  
Henry Ford Museum

### Member Appreciation Days

June 6-8  
The Henry Ford

### Historic Base Ball Games

June 7-8, 14-15, 21-22 and 28-29

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 7  
Greenfield Village

### Motor Muster

June 14-15 (Open Saturday 'til 9 p.m.) (Greenfield Village)

### Summer Discovery Camp\*

June 23-27, July 7-11, July 14-18, July 21-25, July 28-August 1 and August 4-8

## JULY

### Women Who Rock: Vision, Passion, Power

Running through August 17  
Henry Ford Museum

### Annual Salute to America\*

July 2-5 (Greenfield Village)

### Historic Base Ball Games

July 5-6, 12-13, 19-20 and 26-27  
Greenfield Village

### Ragtime Street Fair

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

### Maker Faire® Detroit\*

July 26-27 (Open Saturday and Sunday 'til 6 p.m.) (The Henry Ford)

**AUGUST**

**Women Who Rock: Vision, Passion, Power**

Running through August 17  
Henry Ford Museum

**Historic Base Ball Games**

August 2-3 and 16-17  
Greenfield Village

**Local Roots Evening Dining\***

August 8 (Pavilion,  
Greenfield Village)

**World Tournament of Historic Base Ball®**

August 9-10  
Greenfield Village  
Historic Base Ball in Greenfield Village is made possible through the generous support of Cynthia and Edsel B. Ford II.

**SEPTEMBER**

**64th Annual Old Car Festival**

September 6-7 (Open Saturday 'til 9 p.m.) (Greenfield Village)

**Books, Etc., Sale**

September 6  
Benson Ford Research Center

**Fall Flavor Weekend**

September 27-28  
Greenfield Village

**Farmers Market**

September 27  
Greenfield Village

**OCTOBER**

**Gridiron Glory: The Best of the Pro Football Hall of Fame Preview\***

October 1 (Henry Ford Museum)

**Gridiron Glory: The Best of the Pro Football Hall of Fame**

October 3, 2014-January 4, 2015  
Henry Ford Museum

**Fall Flavor Weekend**

October 4-5  
Greenfield Village  
Presented by Meijer

**Farmers Market**

October 4  
Greenfield Village

**Hallowe'en in Greenfield Village\***

October 10-12, 17-19 and 24-26 (Greenfield Village)

**Hallowe'en in Greenfield Village Dinner Package\***

October 10-11, 17-18 and 24-25 (Greenfield Village)

**NOVEMBER**

**Gridiron Glory: The Best of the Pro Football Hall of Fame**

Running through January 4, 2015  
Henry Ford Museum

**Local Roots Evening Dining\***

November 7 (Lovett Hall,  
The Henry Ford)

**Member Appreciation Days**

November 7-9  
The Henry Ford

**Members 21st Annual Holiday Lighting Ceremony\***

November 24 (Henry Ford Museum)

**Holidays in Henry Ford Museum**

November 28, 2014-January 4, 2015  
Henry Ford Museum

**DECEMBER**

**Gridiron Glory: The Best of the Pro Football Hall of Fame**

Running through January 4, 2015  
Henry Ford Museum

**Holidays in Henry Ford Museum**

Running through January 4, 2015  
Henry Ford Museum

**Holiday Nights in Greenfield Village\***

December 5-7, 12-14, 18-23 and 26-27 (Greenfield Village)

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

December 5-7, 12-14 and 18-23 (Greenfield Village)

**Holiday Nights in Greenfield Village Dinner Package at Eagle Tavern\***

December 5-7, 12-14, 18-23 and 26-27 (Greenfield Village)



KRISTINE HASS

▶ Cooking demonstrations at the Mattox Family Home during Fall Flavor Weekends in Greenfield Village.

**b** Get an inside look at the experiences of The Henry Ford [blog.thehenryford.org](http://blog.thehenryford.org)

**BEST VALUE!**  
Become a member and receive unlimited free admission to Henry Ford Museum and Greenfield Village. For details, visit [thehenryford.org/membership](http://thehenryford.org/membership).

\* Additional fee and/or advance reservation required  
-----  
( 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.



the  
**Henry  
Ford**

Take it Forward.™



**Inspiring.  
Powerful.  
Unexpected.  
Wow.**

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leave your guests  
speechless?

Hope you take compliments well. There'll be plenty of them when you plan an event guests can't stop talking about. From the food to the vibe, uniqueness rules here. What else would you expect? This is a place dedicated to those who did things differently. Will you be one of them?



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[thehenryford.org/plan](https://thehenryford.org/plan)



Photo by: ArisingImages.com

# Stay, Explore + Savor

It's simple. We'll help.

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.

**CALL CENTER:**

313.982.6001

OR 800.835.5237.

**SAVE TIME:**

ORDER TICKETS ONLINE AT  
[THEHENRYFORD.ORG](http://THEHENRYFORD.ORG).

DISCOUNT TICKETS  
AVAILABLE AT MEIJER.



[visitdetroit.com](http://visitdetroit.com)



Preferred Hotel Partners

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313.592.3622  
adobadearborn.com**

A contemporary four-diamond hotel, noted for its trendy atmosphere, spacious accommodations and superb service. Featuring complimentary self-parking,

heated indoor pool, Jacuzzi and fitness center. Adjacent to Fairlane Town Center mall and just minutes from The Henry Ford.

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bestwesterngreenfield.com**

Discover Old World hospitality in a one-of-a-kind, truly unique hotel. Known as the Pink Palace, this full-service hotel offers a perfect blend of historic charm and modern-day conveniences.

Enjoy our indoor pool, whirlpool, sauna, free high-speed Internet, fresh-baked cookies, O'Henry's Restaurant and Squire's Pub. Complimentary shuttle to The Henry Ford. Located minutes from The Henry Ford.

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Centrally located in historic Dearborn overlooking The Henry Ford. Just minutes from Fairlane Town Center mall. Beautiful rooms and suites. Large heated indoor

pool and fitness center. All rooms have a flat-screen TV, refrigerator, microwave, iron and hair dryer. Complimentary: shuttle, hot breakfast, parking and high-speed Internet.

**COMFORT INN & SUITES OF TAYLOR**



**6778 South Telegraph Road  
Taylor, MI 48180  
313.292.6730  
comfortinntaylor.com**

Enjoy a comfortable stay with outstanding hospitality. This hotel features indoor swimming pool, whirlpool, sauna and fitness center, free 30-item hot breakfast

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**



**18950 Northline Road  
Southgate, MI 48195  
734.287.9200  
comfortsuitemsouthgate.com**

Beautiful Gold Award-winning all-suite hotel featuring luxury accommodations without the luxury price tag. Your comfort is assured, as we give you the room to

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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New hotel in Dearborn featuring comfortable spacious rooms, indoor heated pool, free hot Be Our Guest breakfast, fitness and business center and more than

140 HD channels and 20 HBO and eight Cinemax channels. Complimentary shuttle service to The Henry Ford.

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Enjoy the historic hotel built by Henry Ford in 1931. The stately inn offers 229 rooms and Colonial Home suites. Located only three blocks from The Henry Ford,

this Colonial retreat offers a setting reminiscent of an American inn, complete with the service and amenities you expect from Marriott. Shuttle to The Henry Ford based on availability.

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dearborn.doubletree.com**

Distinctively designed hotel is conveniently located minutes from The Henry Ford. Enjoy the full-service features in our Great Room, excellent cuisine at Grille 39, state-

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.

**HOLIDAY INN EXPRESS & SUITES - ALLEN PARK**



**3600 Enterprise Drive  
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Accommodations at a Glance

HOTEL	LOCATION AREA	DRIVE TIME*	SLEEPING ROOMS	POOL	PETS	MEETING ROOMS	MEETING SPACE (Sq. ft.)	AD ON PAGE	
<b>FULL SERVICE</b>	<b>Adoba Hotel Dearborn/Detroit</b>	<b>Dearborn</b>	<b>5</b>	<b>773</b>	<b>Indoor</b>	•	<b>30+</b>	<b>62,000</b>	<b>76</b>
	<b>Best Western Greenfield Inn</b>	<b>Dearborn (I-94 corridor)</b>	<b>10</b>	<b>209</b>	<b>Indoor</b>	•	<b>4</b>	<b>1,047</b>	<b>69</b>
	Detroit Marriott at the Renaissance Center	Downtown Detroit	15	1,298			29	100,000	73
	<b>DoubleTree by Hilton Detroit-Dearborn</b>	<b>Dearborn</b>	<b>10</b>	<b>353</b>	<b>In/Out</b>		<b>16</b>	<b>12,000</b>	<b>74</b>
	<b>Holiday Inn Southgate - Banquet &amp; Conference Center</b>	<b>Downriver (I-75 corridor)</b>	<b>15</b>	<b>160</b>	<b>Indoor</b>		<b>8</b>	<b>9,000</b>	<b>67</b>
	<b>The Henry, an Autograph Collection by Marriott</b>	<b>Dearborn</b>	<b>5</b>	<b>323</b>	<b>Indoor</b>	• \$	<b>14</b>	<b>26,000</b>	<b>71</b>
<b>HISTORIC</b>	<b>The Dearborn Inn, a Marriott Hotel</b>	<b>Dearborn</b>	<b>3</b>	<b>229</b>	<b>Outdoor</b>		<b>17</b>	<b>17,000</b>	<b>68</b>
	The Westin Book Cadillac	Downtown Detroit	15	453	Indoor/Spa		13	26,000	70
<b>LIMITED SERVICE</b>	A Victory Inn Dearborn	Dearborn	7	77	Outdoor		0		72
	<b>Comfort Inn &amp; Suites - Dearborn</b>	<b>Dearborn</b>	<b>4</b>	<b>116</b>	<b>Indoor</b>		<b>1</b>	<b>250</b>	<b>69</b>
	<b>Comfort Inn &amp; Suites - Taylor</b>	<b>Dearborn (I-94 corridor)</b>	<b>10</b>	<b>78</b>	<b>Indoor</b>		<b>1 (15 people)</b>		<b>71</b>
	<b>Comfort Suites - Southgate</b>	<b>Downriver (I-75 corridor)</b>	<b>15</b>	<b>78</b>	<b>Indoor</b>		<b>1 (50 people)</b>		<b>68</b>
	<b>Country Inn &amp; Suites - Dearborn</b>	<b>Dearborn</b>	<b>7</b>	<b>100</b>	<b>Indoor</b>	•	<b>1 (55 people)</b>		<b>75</b>
	<b>Courtyard by Marriott - Detroit Dearborn</b>	<b>Dearborn</b>	<b>10</b>	<b>147</b>	<b>Indoor</b>		<b>2</b>	<b>1,274</b>	<b>67</b>
	Hawthorn Suites by Wyndham	Detroit	10	128	Outdoor	• \$	0		67
	<b>Holiday Inn Express &amp; Suites - Allen Park</b>	<b>Dearborn (I-94 corridor)</b>	<b>10</b>	<b>163</b>	<b>Indoor</b>		<b>2 (15 people each)</b>		<b>72</b>
	Marriott TownePlace Suites - Livonia	I-275 corridor	20	94	Outdoor	• \$	0		70
	Quality Inn & Suites Detroit Metro Airport	Airport (I-94)	15	116			1 (75 people)		72
	Red Roof Inn - Detroit-Dearborn	Dearborn	7	111		•	0		73
	Red Roof Inn - Detroit Southwest Taylor	Downriver (I-75 corridor)	15	111		•	0		78
SpringHill Suites by Marriott - Southfield	Southfield	15	84	Indoor		1	249	78	
<b>BED &amp; BREAKFAST</b>	Bishop-Brighton Bed and Breakfast	Downriver	20	3			1	350	72
	York House Bed & Breakfast	Dearborn	10	3			0		67
<b>CAMPING</b>	Camp Dearborn	NW Oakland County	45	191	Outdoor		0		73
	Detroit Greenfield Campground/RV Park	I-94 corridor	20	212	On Lake	•	Outdoor pavilion	600	72

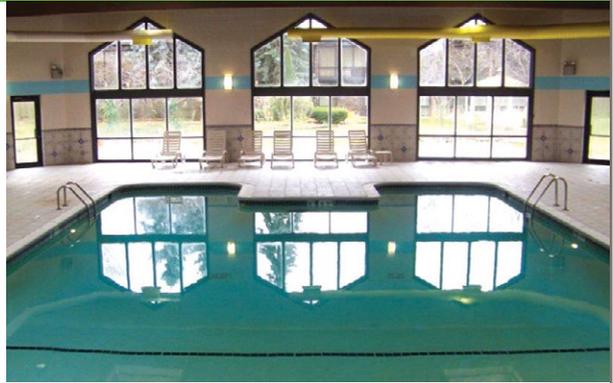
\*Drive time in minutes to The Henry Ford.



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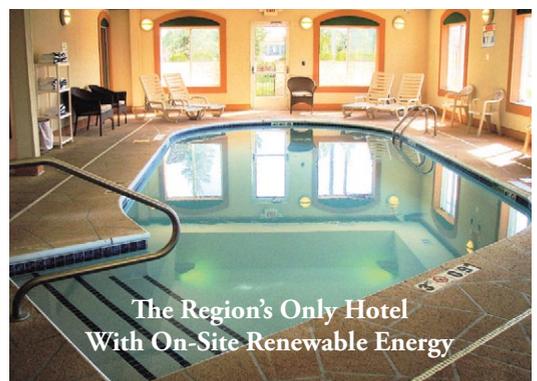
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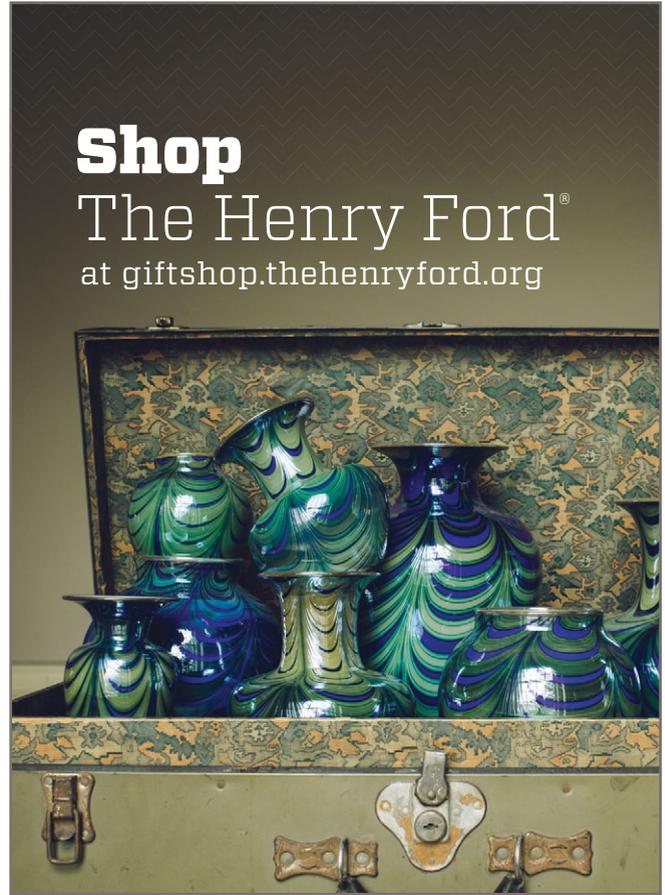
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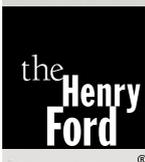
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# IT'S SO AMAZING THE INFLUENCE ONE LITTLE HOUSE OF MUSIC HAS ON PEOPLE ALL OVER THE WORLD.

– ALLEN RAWLS  
CEO, MOTOWN MUSEUM

The Motown Museum preserves the birthplace of a musical legacy and the story of a Detroit entrepreneur who – with a dream, an \$800 family loan and homegrown talent – created “The Sound of Young America.” Detroit holds many more stories of influence, like the Rosa Parks bus at The Henry Ford, honoring the heritage of the Charles H. Wright Museum of African American History; and other cultural influences from the Arab American National Museum to Mexicantown, Greektown and beyond.

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# ONE LAST LOOK

## FREE A MAN TO FIGHT WORLD WAR II POSTER

War changes everything — countries, people, politics, the course of history. During World War II, propaganda posters didn't depict women slaving over the stove. Instead, women were physically capable members of the workforce, controlling heavy machinery, lubricating locomotive wheels and succeeding in a business that was essential to a U.S. victory.

Rosie the Riveter may be one of the most familiar American symbols of women in the workforce, but this lesser-known Leslie Ragan original of a woman doing a man's job when called upon is equally evocative and oh so powerful.

**DID YOU KNOW? /** Commercial artist Leslie Ragan (1897-1972) composed this poster in 1943. Explore his portfolio of work — especially his locomotive-themed illustrations — and then watch the holiday classic *Polar Express* (2004). See any similarities?



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Rosa Parks Bus, Henry Ford Museum



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