

GENIUS IN AMERICA

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Smithsonian

BRIGHT IDEAS + ELECTRIFYING DISCOVERIES

YOU MUST REMEMBER THIS

*For the first time
scientists implant
a false memory*

FASTER, BETTER, STRONGER

*Someday everyone will
want bionic limbs*

UNCHARTED COUNTRY

*Rosanne Cash reinvents
the concept album*

MISSISSIPPI RISING

*A filmmaker pioneers
an immersive way to
experience history*

SEEING THE FUTURE

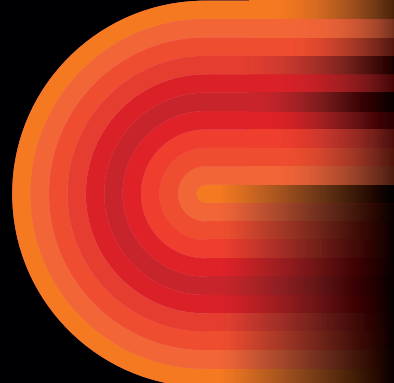
*How a teen inventor
created a new reality*



PLUS

STEPHEN HAWKING
GETS ROMANTIC

JANE GOODALL
GETS GOOGLED



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The 2014 American Ingenuity Awards

Our third annual special issue of world-changers in the sciences, history, society and the arts is a chronicle of imagination, hard work and the perpetual innovation that defines the nation's spirit

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The brains behind an amazing bionic prosthesis is ready to enhance everyone's capabilities
BY MATTHEW SHAER

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His program to offer a college degree to prison inmates gives them a second chance
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Suspended above city spaces, her dazzling woven sculptures cast a magical spell
BY MAX KUTNER

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The filmmaker's found-footage masterpiece about the Great Flood immerses you in history
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In a neuroscience breakthrough, the duo implanted a false memory in a mouse
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She's engineering an answer to the tech world's diversity problem: teaching black girls to code
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The singer-songwriter traveled to new artistic terrain in the land of her Southern ancestors
BY GEOFFREY HIMES

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BY ELIZABETH QUILL

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In his parents' garage, he dreamed up a homemade headset that became a new reality
BY TAYLOR CLARK

COVER: Image by Chip Kidd and Geoff Spear

THIS PAGE: Janet Echelman's 1.26 Sculpture Project at the Amsterdam Light Festival



STUDIO ECHELMAN

JANET ECHELMAN • VISUAL ARTS

HIGH WIRE

HER SKY-HIGH SCULPTURES, CREATED FROM MILES OF TWINE AND MANIPULATED BY CUTTING-EDGE TECHNOLOGY, TRANSFORM URBAN SPACE

BY MAX KUTNER

Portrait by Jo Hamilton • Photographs by Reed Young

“When I’m surrounded by concrete buildings like tall industrial boxes, my own physical presence feels so completely displaced,” says Janet Echelman. Her solution: huge, sinuous fiber sculptures strung between buildings high above the ground to serve as a “mediating piece,” she says, between us and our alienating urban spaces. The artist, 48, combines an ancient technology—knots—with modern polyethylene fiber that’s stronger than steel and dazzling computer-controlled lighting.

Echelman, a painter, turned to sculpture in 1997 when she traveled to India and her paints were lost in transit; she began making shapes with local fishermen’s nets. She has won renown for some 35 major projects in cities from Santa Monica to Singapore.





STUDIO ECHELMAN, P. 35; REFERENCE IMAGE: REED YOUNG

"I don't take on a project unless it requires me to push the boundaries of my art," Echelman says. In her studio, behind her house in the Boston suburb of Brookline, she often first plots out a project in paint (left). As it takes shape, designers in her studio use computers to virtually drape forms over 3-D images of city neighborhoods. Engineers help her design sculptures that can support their own weight and withstand local wind forces. *Skies Painted with Unnumbered Sparks* (above), suspended above Vancouver last March for the 30th-anniversary TED conference, was Echelman's largest project to date, spanning 745 feet and using 145 miles of twine; a system created by artist Aaron Koblin allowed nighttime viewers to change the lighting with their mobile devices.



With *Impatient Optimist* (below, a prototype in testing, October 2013), Echelman sought to give physical form to the humanitarian mission of the Bill and Melinda Gates Foundation; the work will be permanently installed on the foundation's Seattle campus in early 2015. Coming in spring is *Pulse*, in Philadelphia, which she describes as "a live X-ray of the inner workings of a city." That project, embedded in a plaza next to City Hall, will emit glowing curtains of mist tracing the movement of three subway lines underground. "People assume the city is unfolding as it must," says Echelman (opposite, experimenting in her studio). "But we have the ability to create a different environment. If that can be different, what else can be different?" O



STUDIO ECHELMAN