

June 18, 2014

Background on the Exhibits and Attendees at the First-Ever White House Maker Faire

The first-ever White House Maker Faire will feature over 100 Makers from more than 25 states, and include more than 30 exhibits. The President will view a subset of these exhibits, representing the incredible range of creativity and ingenuity unlocked by the Maker movement. Following his tour of the White House Maker Faire, the President will deliver remarks to an audience of entrepreneurs, students, business leaders, mayors, and heads of non-profit organizations.

Notables attending the first-ever White House Maker Faire

Expected attendees include:

Senior Administration Officials, Appointees, and Members of Congress

- **John P. Holdren**, Assistant to the President for Science and Technology and Director, Office of Science and Technology Policy (OSTP)
- **Jeff Zients**, Director of the National Economic Council (NEC) and Assistant to the President for Economic Policy
- **Paulette Aniskoff**, Deputy Assistant to the President and Director of the Office of Public Engagement
- **France Cordova**, Director, National Science Foundation (NSF)
- **Francis Collins**, Director, National Institutes of Health (NIH)
- **Susan Hildreth**, Director, Institute of Museum and Library Services (IMLS)

Innovation Leaders and Communicators

- **Dale Dougherty**, Founder, MAKE Magazine
- **Dean Kamen**, famed inventor and Founder, DEKA Research and FIRST
- **Michael Gregoire**, CEO, CA Technologies
- **Mark Hatch**, CEO, TechShop
- **Joseph Magnacca**, CEO, Radioshack
- **Justin Rattner**, Intel Senior Fellow, Intel Corporate Vice President, and President Intel Foundation
- **Abraham "Avi" Reichental**, CEO, 3D Systems
- **Yancey Strickley**, CEO, Kickstarter

Local Officials

- **Kevin Smith**, Mayor, Anderson, IN
- **Elizabeth Patterson**, Mayor, Benicia, CA
- **Peggy Smith**, Mayor, Charles Town, WV
- **Lee Moritz**, Mayor, Conover, NC
- **Mark Olson**, Mayor, Fayetteville, NY
- **Dayne Walling**, Mayor, Flint, MI
- **Svante Myrick**, Mayor, Ithaca, NY

- **Frank Janakovic**, Mayor, Johnstown, PA
- **Bobby Hopewell**, Mayor, Kalamazoo, MI
- **Madeline Rogero**, Mayor, Knoxville, TN
- **Virgil Bernero**, Mayor, Lansing, MI
- **Jennifer Selin**, Mayor, Morgantown, WV
- **Tom Beehan**, Mayor, Oak Ridge, TN
- **Jean Quan**, Mayor, Oakland, CA
- **William Capote**, Mayor, Palm Bay, FL
- **Bill Peduto**, Mayor, Pittsburgh, PA
- **David Hamill**, Mayor, Ranson, WV
- **Lovely A. Warren**, Rochester, NY
- **Larry Morrissey**, Mayor, Rockford, IL
- **Joseph Curtatone**, Mayor, Somerville, MA

A sampling of the exhibits that the President will see include:

- **\$5 Chemistry Set for the 21st Century with a Musical Background:** As a child growing up in India, **Manu Prakash**, of Palo Alto, CA, was a regular science-fair winner with grand dreams of scientific enterprise. Today, he is working to bring low-cost, cutting-edge scientific tools to schoolchildren and laboratories in every corner of the globe. Prakash's small yet powerful design, inspired by a toy music box, costs only \$5, and could enable schoolchildren from low-income communities to not only learn about science and engineering but explore and address real-world issues like water quality and contamination. As part of this vision of reaching more students with the power of discovery, Manu has also created Foldscope, an origami-based paper microscope that costs less than \$1.
- **Robotic Giraffe Merges Engineering and the Arts:** California-native **Lindsay Lawlor**, of San Diego, CA, a computer programmer, is passionate about bringing electro-mechanical-animals to life. Lawlor's Robotic Giraffe is a 17-foot-tall, 2200-lb robotic giraffe that "walks" on wheels and is powered by a 12-horsepower hybrid fuel-engine motor. Lawlor designed the Robotic Giraffe to play music, feature innovative lighting displays, and carry up to 30 people in its carriage. Lawlor's masterpiece took him more than a year to complete. He continues to evolve and refine the design each year, bringing what he made with his own two hands to Maker Faires and festivals across the country. The electric giraffe is an example of how making, engineering, and design, combined with the arts, can bring science, technology, engineering, and math to a wide-variety of audiences.
- **Newborn Incubator Helping Save Premature Babies in Rural Villages:** As a student Maker at Stanford University, **Jane Chen**, of San Francisco, CA, took on the challenge to develop a baby incubator for \$200 – which is about 1% of the price of the existing technology. The result was Embrace, a low-cost infant warmer that does not require electricity and enabling its use in rural areas around the world and expanding access to the medical equipment needed to save babies born prematurely to remote villages. Without a technology like the Embrace infant warmer, mothers of newborns born prematurely in rural villages often lack access to

the medical equipment needed to save their children's lives. From its prototype developed in a TechShop makerspace in San Francisco, Embrace has now helped more than 50,000 babies around the globe. This month, Embrace announced that a donation from Beyoncé would bring their product to 10 countries in Africa and touch the lives of another 2,000 newborns.

- Homeless Maker Turned Entrepreneur Pays it Forward: In 2011, **Marc Roth**, of San Francisco, CA, found himself homeless in San Francisco after health challenges left him unable to work. After hearing two co-residents in a homeless shelter talk about a local “TechShop” facility, Marc decided to visit one out of sheer curiosity. Amazed by what he found inside and with the modest amount of money that he had, Marc signed up for a one-month membership to learn basic skills in woodworking, laser cutting, welding, and 3D printing. Within 16 months, this curiosity evolved into Marc launching his own business, SF Laser, to provide custom laser-cutting and etching services. Now Marc is working to provide others with an opportunity similar to the one that changed his life with The Learning Shelter—an online program that will teach tech and manufacturing skills to those trying to get back on their feet.
- Solving a 5,000 Year-Old Problem: Student Develops Comfortable Crutches: When **Partha Unnava**, of Atlanta, GA, broke his ankle playing basketball, he made an important discovery—he hated crutches. After spending six weeks hobbling and aching, he decided that it was time to make his attempt at fixing a 5,000-year-old problem. Unnava, now a fifth year Biomedical Engineering student, helped to develop the Better Walk Crutch, which reduces pain and fatigue for crutch users and launched in 2013 at Georgia Tech. Better Walk has since participated in Zero to 510—a medical device accelerator program for start-ups, raised \$150K in seed funding from venture capital groups, and obtained letters of intent from orthopedic surgeons who are passionate about bringing this product to the marketplace.
- Using DIY Balloons to Map Your Community: Up, up, and away was the idea behind an invention from Public Lab- a non-profit organization that develops open source hardware and software from community-based environmental monitoring. **Dr. Sara Wylie**, of Boston, MA, co-launched Public Lab as a way to create and share Do-It-Yourself tools to empower citizen scientists to study environmental health. A key tool was Grassroots Mapping, a cheap digital camera attached to a balloon or kite to create high-resolution aerial maps that were better and more up to date than satellite photography. Flying these balloon cameras from canoes, the Public Lab tool has been used by community mappers like **Eymund Diegel**, of Brooklyn, NY, who undertook an effort in his local community to map the Gowanus Canal Superfund site using canoe-based teams of balloon camera photographers. Working with the Gowanus Canal Conservancy, their grassroots maps have not only assisted in the cleanup of the site, but also identified a potential Revolutionary War cemetery, buried under the Superfund landfill.
- Developing Smart, Eco-Friendly Urban Furniture for the Digital Age: **Sandra Richter**, of Cambridge, MA, has a passion for developing solutions for an urban living environment, including designing “smart” furniture with her startup Changing Environments. Sandra and her team designed a solar-powered bench, or a “soofa,” that allows people to charge their phones while stopping for a quick rest. The soofa is part of a larger effort to create dual-purpose modular furniture that also serve as hubs for charging electronic devices and sensing

local environmental conditions – unique capabilities that have become everyday needs for the mobile generation. Just a week after the White House Maker Faire, Sandra and her team will be installing their first 12 units in Cambridge and Boston.

- Passionate Individuals Help Labs Become Fab: **Nadya Peek, Makeda Stephenson, and Neil Gershenfeld** are the dedicated Makers demonstrating the Mobile Fab Lab, an outreach effort founded by the Massachusetts Institute of Technology (MIT)'s Center for Bits and Atoms (CBA), where Neil serves as Director. CBA's Fab Lab is a makerspace with the appropriate prototyping tools for independent fabrication projects. Nadya, a graduate student MIT, is working to make product development available to everyone. Makeda, who has been involved with the Fab Lab since she was 13-years-old, is working to promote efforts across the country, for students and adults alike to develop skills, as she has.
- Bringing Makers to Market in the United States: When **Jen McCabe**, of Las Vegas, NV, and the team at Romotive built a tiny personal robot named Romo in 2011, she made a splash within the Maker Movement. From her own personal experience, Jen decided that developing hardware shouldn't be so hard, and has dedicated herself to helping Makers move beyond their garages and into a space where creative boundaries don't exist. Jen founded Factorli, a small urban factory in Las Vegas, NV, that serves Makers, designers, and startups of all sizes. Factorli offers a unique space for innovators to work out the kinks of their new products by producing them in small quantities, helping them reach the market right here in the U.S. Jen's neighborhood factory provides the foundation for innovative technologies to thrive, beautiful things to be made, and the chance for collaboration among makers of all backgrounds.
- West Philly Teens Build Ground-Breaking Biodiesel Car: Most students don't spend their school days welding and drilling, but **Taliya Carter, Joshua Pigford, and Derrick Bell**, with the help of **their teacher Michael Lumb and their principal Simon Hauger**, of Workshop School in Philadelphia, PA, did exactly that – and built a car! And not just any car: their 100 mpg Factory Five 818 biodiesel hybrid is fast, sleek, and environmentally friendly. The EVX Team from the Workshop School in West Philadelphia has been designing and building fuel efficient cars since 1998. Students at the Workshop School have also set out to solve some of the world's toughest problems. Students have built modular post-disaster homes, energy efficient lighting systems for a distressed West Philadelphia business corridor, and indoor hydroponic gardens.

Additional exhibits at the White House Maker Faire include:

- After Shooting Marshmallows with the President, Joey Hudy's Latest Invention Lights up the Room: After demonstrating his Extreme Marshmallow Cannon for President Obama in 2010, **Joey Hudy**, of Anthem, AZ, has gone on to pursue as career as a Maker, creating and selling his own products, and is now Intel's youngest intern. Joey's infamous Extreme Marshmallow Cannon--which he built at home from pieces he purchased at the hardware store--debuted at Maker Faire Bay Area 2011. Since demonstrating the cannon at the White House Science Faire with President Obama in 2012, Joey has expanded his projects and is now known for the 3x3x3 LED Cube Arduino shield with which he launched his first business selling at

retail through Maker Shed. Since Intel CEO Brian Krzanich hired Joey as an intern, he has blown up his 3x3x3 shield into a colorful display of 1000 LEDs.

- Companies Team Up to Drive Vehicle Manufacturing into the Future: Local Motors, founded by U.S. Marine and Iraq veteran **Jay Rogers**, is a leader in open-source hardware innovation that has created an online platform to connect a global community of designers, engineers, enthusiasts and makers to crowd-source ideas and design, build, and sell custom-made vehicles. While traditional automotive companies manufacture cars at a few giant, centralized plants, Local Motors prototypes and produces vehicles via a distributed network of “microfactories”: new and existing structures that are outfitted with essential equipment to move an idea from mind to market at unprecedented speed. Local Motors has leveraged this innovative network to produce a full-size Rally Fighter car, the world’s first open-source production vehicle. To demonstrate both the potential and scalability of Local Motors’ innovative approach to manufacturing, the company also operates a network of MobiFactories--highly customized shipping containers that are outfitted with the equipment necessary to empower communities to make. The MobiFactory is designed to be easily transported anywhere in the world, making hardware innovations and custom vehicle manufacture even more accessible. Recently, Local Motors has partnered with GE Appliance on a new concept called FirstBuild to help them engage the ‘crowd’ in order to power the future of appliances.
- Manufacturing and “Making” at Your Desktop: **Danielle Applestone**, of San Francisco, CA, a life-long Maker. When she was just 8-years-old, Danielle helped her father, a veteran who lost the use of his legs, build a wheelchair-accessible workshop—constructing everything from ramps and cabinets to spigots. More recently, Danielle joined Otherlab and led the company’s efforts to encourage students from underrepresented communities to pursue engineering and manufacturing. Danielle now serves as the CEO of Other Machine Co. (OMC), a fabrication-focused startup that produces a small, lightweight machine that can carve anything from circuit boards to jewelry called the “Othermill.” With this technology, Danielle aims to help makers directly harness the power of modern manufacturing in their homes and businesses.
- Underwater Robot Born in Garage Explores World’s Oceans: After learning about an underwater cave, **David Lang and Eric Stackpole**, both of California, decided they just had to explore it and took matters into their own hands. They prototyped an idea for a low-cost underwater robot and then tapped into a global community of like-minded Do-It-Yourself ocean explorers—from professional ocean engineers to hobbyists—to help work, tinker, and improve upon their open-source design. Together, this global community is deploying a network of connected devices to explore the oceans and lakes of the world—helping make underwater exploration accessible to all. To get their project, OpenROV, off the ground and into the water, the pair launched a Kickstarter campaign that has evolved into growing ROV (Remotely Operated Vehicle) manufacturing company. David and Eric’s project got its start in a Cupertino garage and today the OpenROV online community includes more than 3300 members from 50 countries.
- Teenage Entrepreneur Creates Accessible Electronic Learning: Three years ago, 10-year-old

Quin Etnyre, of Central California, discovered his love of electronics by reading Make magazine. He attended and was inspired by his first Maker Faire in the Bay Area soon thereafter, and got his hands on everything he could find about embedded electronics. Quin used Arduino, an open-source electronics platform to start his own business—Qtechknow, which features a line of fun and educational kits Quin has developed to empower anyone to experiment with electronics, regardless of age, background or skill level. Quin's accomplishments also include educating children and adults on how to be Makers, publishing 27 Instructables, posting tutorials on his website, teaching Arduino classes at hackerspaces, and presenting at Maker Faires around the world.

- First-ever 3D scan and print of the President: Earlier this year, President Obama participated in the first-ever presidential 3D scan, allowing digitization experts from Smithsonian to capture the President's 3D digital image. Representatives of the Smithsonian will unveil a 3D printed bust of the President, which will ultimately be debuted in archival quality at the Smithsonian. Smithsonian will also showcase other ways this technology is working to bring history to life by featuring 16-year-old **Akilah Padgett**, of Washington, D.C., who created a 7 foot tall, PaperCraft model of a Tyrannosaurus Rex. Akilah undertook the project at ARTLAB+, a dynamic, interactive and creative space designed specifically for teens at the Hirshorn Museum. Akilah shares her experience of working on this project with others stressing the importance of design, engineering, art and science, and even presented her work at the Smithsonian National Board Meeting.
- 3D Modeling the Molecules inside us: As a structural biologist working at the National Institutes of Health (NIH) in Washington, D.C., **Darrell Hurt** found it challenging to communicate the intricate details of protein shapes and interactions to other scientists, as well as to his friends and family. To solve this problem, in 2007, Darrell began using 3D printing to create physical models of molecular structures that others could touch and hold, making it easier to understand complex models. After seeing firsthand the benefits of creating and sharing these 3D printed models with others, Darrell came up with the idea for the NIH 3D Print Exchange project, where anyone can freely create, share, and download bioscientific and biomedical 3D-printable models of things like proteins, viruses, cellular structures, organs, and even customized laboratory equipment that can be used in the classroom, laboratory, and in physician and patient education. The NIH 3D Print Exchange also features modeling tutorials and educational materials that can be used in or outside of the classroom. The NIH 3D Print Exchange is a collaborative effort led by the National Institute of Allergy and Infectious Diseases (NIAID) in collaboration with the Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD) and the National Library of Medicine (NLM).
- Keyboards Go Bananas for Cutting-Edge Invention Kit: Most parents tell their children not to play with their food, but thanks to **Jay Silver**, of Cocoa Beach, FL, and the technology to turn any everyday object into a touchpad, kids can not only play with their food, they can make music with it. With this invention, users can play a piano made of bananas or play Pacman by touching ice cubes. Jay Silver created Makey Makey as an invention kit for the 21st century, enabling beginners and experts, artists and engineers, and everyone in between. MaKey MaKey is now used in classrooms across the country by teachers like **Ingrid**

Gustafson, of Arlington, MA. Ingrid is a middle school teacher who uses this playful tool to engage her class in the creative design process using innovative and hands-on methods to develop solutions to problems using technology.

- Driven by Father’s Memory, Girl Turns Homework into a Home that Works: As part of a homework assignment, 12-year-old **Sicily Kolbeck**, of Marietta, GA, decided to design and construct with the help of her parents a “tiny house”—an efficient and portable dwelling that packs the conveniences of a modern home into a couple of hundred square feet. The tiny house ended up having an outsize impact on Sicily’s life. After her father passed away in a car accident in early 2013, an outpouring of community support motivated Sicily to continue construction in his honor. Sicily completed the project in April 2014. She is now the proud owner of a 128-square foot portable home (complete with kitchen, bathroom, and bedroom), and is a master of construction knowledge and skills that will last a lifetime.
- Making on the South Side of Chicago: When he’s not playing football, wrestling, or competing in track, teenager **Antwon Lamon**, 18, is doing his part to turn the South Side of Chicago into a hot-bed for Makers. A recent graduate of Washington High School, led a team that won the 2014 Chicago Public School/Illinois Technology Foundation CTE Capstone competition. He and his team set out to create a non-violent game that would challenge both adults and children alike. The end result was a 3D computer game based on moving marbles through a series of vexing mazes. **Brenda Wilkerson** and the City of Chicago are working to boost computer science education in the city’s public schools through the “Computer Science for All” initiative, which aims to make computer science resources available to all Chicago Public Schools.
- Lighting the Way for Disaster Relief: While studying architecture and design in graduate school, **Andrea Sreshta**, of Chicago, IL, connected with classmate Anna Stork over a common belief that design and design thinking can be used to solve global issues. After sensing the need for portable and sustainable lighting options after seeing news coming from Haiti after the country was hit by a devastating earthquake, Andrea and Anna together invented the LuminAID light, a solar-powered, lightweight, and waterproof lamp that packs flat and illuminates spaces in emergency situations. Now that they have brought the LuminAID light to market, Andrea and Anna are working on making portable lighting part of the standard supply package included in relief missions.
- Designing a Safer Way for the Elderly and Disabled to Get Around: Born with a knack for making, **Adrian Niles**, an 18-year-old of Brockton, MA, grew from tinkering with Legos at age 4 to building his own version of a Segway from scratch as a sophomore in high school. The “Self-Balancing People Mover,” as Adrian calls his most popular invention, was designed to help the elderly and disabled move around more safely and efficiently. His project helped win him the silver medal in the national Afro-Academic Cultural Technological Scientific Olympics (ACT-SO), and earned him recognition as the Maker Choice Award at the World Maker Faire in New York. The “People Mover” is one of many projects in Adrian’s maker portfolio.

- Teen Takes 3D Printing to a New Dimension: One of the first students at the Digital Harbor Foundation (DHF) Tech Center—a nonprofit organization in Baltimore created to prepare teenagers for careers in technology—was also one of its most impressive. Using skills learned during a semester-long course at DHF, 16-year-old **Darius McCoy**, of Baltimore, MD, has already built several 3D printers; co-founded Frozen Lava, a company that produces and sells 3D printed custom iPhone cases, held workshops to teach fellow high school students about 3D printing, and has presented his work at a TEDxYouth conference in Baltimore. When not working on other projects related to 3D printing, electronics, and programming, Darius works as a student leader at DHF, helping to share his knowledge of and passion for technology with other teens.
- Bringing out the Playful Side of Engineering through Circuits Made of Play Dough: Maker duo **AnnMarie Thomas and Sage Thomas**, of St. Paul, MN, like to bring out the playful side of engineering. This mother-daughter team created Squishy Circuits, a method for building working electrical circuits out of play dough. Imagine play dough creations that light up, buzz, or move! Squishy Circuits were developed in AnnMarie's Playful Learning Lab at the University of St. Thomas to get kids excited about engineering and to foster young creativity. Taking after her mom, Sage is a proud maker who enjoys teaching others about electricity, and showcasing her Squishy Circuits at schools and Maker Faires. AnnMarie leads the Playful Learning Lab and served as the Founding Executive Director of the Maker Education Initiative, a non-profit aimed at inspiring young people to make, giving them confidence to make, and sparking their interest in STEM fields and the arts.
- Teenage Girls Launch Robotics Company: Beatty Robotics was born from **Camille Beatty**, 14, and **Genevieve Beatty**, 12, of Asheville, NC, who began experimenting in robotics at their home with little more than Internet access and the support of their parents. This initial experimentation resulted in their very own robot and the Beatty family hasn't looked back since. The process was so much fun that the girls and their parents continued to build-- combining creative design, electronics, metal machining, and software programming. This innovative family has built a 16-legged walking creature, an 8-wheeled lunar rover, and a flying drone, as well as a now-famous Mars Rover replica landing them in Popular Science and Make Magazine and on Yahoo! And Good Morning America. The family now builds high-quality robots for museums like the New York Hall of Science.
- Creating Legos for the iPad Generation: In a world where innovators are stymied by sometimes confusing engineering challenges like circuits, littleBits offers a solution. **Krystal Persaud**, of New York, NY, is a product designer for littleBits, a company that makes circuitry a snap, literally. To build a circuit with littlebits, all you do is snap together the magnetic, color coded modules – no programming, soldering, or wiring required. You can connect power modules to inputs (buttons, sensors, triggers, dimmers, etc.), outputs (motors, lights, sounds, etc.), or your computer, to create robots, synthesizers, household gadgets, and more. Krystal and her team wanted to make the nuts and bolts of innovating easier, so anyone could have the tools and confidence to be an inventor.
- Making Because of the Affordable Care Act: **David Perry**, of Portland, OR, a mechanical engineer living in Oregon, chose 2014 as the year to start his own business – thanks to easy

access to affordable health care. David's new venture, OpenFab PDX, strives to empower individuals with affordable "making" services, as well as to inspire existing makers and businesses with the advantages of 3D printing and open source projects. To demonstrate these advantages, David created the F-F-Fiddle, an open source electric violin made with FFF style 3D printers. With 3D printing on the rise, David has found himself as an able advocate for the technology, and helps to bring 3D printing and digital fabrication into new environments like libraries, small businesses, and children's events.

- Covering up Tattoos with Science: Most people are familiar with temporary tattoos—patches that adhere to your skin for a day or two before washing away. Now imagine if you could make the opposite happen and cover up a permanent tattoo, temporarily. **Erik Spiller**, a 19-year-old from Philadelphia, PA, has just started his college career and he has already created an innovative product that does just that. Capitalizing on his interest in science, chemistry and technology, Erik developed a temporary adhesive patch that can be placed over a tattoo, making it disappear. Each Cover Up is printed using a dye sublimation transfer, which helps prevent smudging, lasts 3-5 days, is hypoallergenic, and involves no makeup.
- Charging your iPhone with your Footsteps: **Hahna Alexander**, a 23-year-old from Pittsburgh, PA, may not have found a way to get kids off their phones, but she has found a way to get them on their feet. Hahna is the co-founder and CTO of SolePower, an innovative company known for a shoe insole that charges portable electronics by walking. The device branded "EnSole" works by generating power in the heel with each step and storing power in a Power Pack holstered on the shoelaces. The Power Pack can be removed at any time to charge a phone or any other electronic device using a USB port. SolePower's 3-year project has won the team the 2014 Popular Science Invention of the Year award as well as the Africa Energy Award for Innovator of the Year. The SolePower team looks forward to bringing easy-access energy to shoes all over the world, one step at a time.
- High School Team competes with cutting-edge 3D: **Scott Turner**, of Venice, CA, has been creating 3D printed objects and teaching others about the capabilities of the technology for almost as long as the technology has been in existence. As a high school student, **Joshua St. John**, of New York, NY, began experimenting with 3D modeling and machining in his tech class. **Fletcher Blue**, of Knoxville, TN, is a 4-year veteran of the FIRST RoHAWKtics Team, which has been recognized for their innovative and pioneering use of 3D printing to build the robots. With the help of mentors from Oak Ridge National Laboratory, this team brought their 3D printing skills together and became the first to enter a fully 3D printed polymer robot into the FIRST robotics competition.
- Marine One Pilot Turned Maker: The White House Maker Faire is not **John Lawton's** first visit to the White House. After a few years flying President Obama, Vice President, and various heads of state in Marine One and the Presidential Helicopter Squadron, Lawton, of Austin, TX, returns to the White House as a Maker. Currently pursuing a lifelong interest in traditional wood and metal making, John participated in GE and the VA Center for Innovation's year-long veterans training program at TechShop Austin-Round Rock to develop a broad variety of building, prototyping, and manufacturing skills. Lawton has clearly found his second calling, becoming an entrepreneur by selling beautiful handmade

furniture and creating impressive art installations, some of which join his two passions by incorporating helicopter parts.

- State of the Union Visualization: An Historic Reference: After hearing President Barack Obama's State of the Union address on February 12, 2013, French artist and designer **Gilles Azzaro** was inspired to create a 3D-printed art piece based on the President's message about the importance of additive manufacturing and his call to action to create a network of National Manufacturing Innovation Institutes. Azzaro developed his own program to transform the audio recording of the State of the Union address into a format that could be 3D printed. The 3D printed portion of the art piece took a total of 350 hours to build. The result is an artful and tangible rendering that synchronizes the audio of the speech with a laser that travels across the sculpture. The piece demonstrates the broad capabilities of the technologies that will also help drive a new era of personalized manufacturing.
- Building Breakfast: 3D Print Your Food with PancakeBot: Making your own pancakes from scratch is fun, but having the PancakeBot do it for you is even better. **Miguel Valenzuela**, who is originally from California but now lives in Norway, was asked by his two young daughters to create a pancake machine out of LEGOs—a request he just couldn't turn down. When Miguel and his family debuted the invention at the 2012 World Maker Faire in New York City, it instantly became a crowd favorite. Over the last couple of years, Miguel has continued to improve the design and functionality of the PancakeBot, releasing the newest version earlier this year. Today, Miguel travels around the world to help inspire kids to create and have fun with their food as well as develop interests in engineering, programming and food manufacturing through the use of PancakeBot. To encourage others to create their own PancakeBot, Miguel has made all instructions for constructing the LEGO version freely available online.

In addition to those exhibiting, honored makers invited to the White House Maker Faire include:

- *Christian Blake and Brian Copes*
Calera, AL
Christian and his teacher, Brian, represent a group of students from a Calera, AL, high school, who designed and built low-cost prosthetic legs using 3D technologies, delivering them to a community in Honduras.
- *Davis Dunaway, Andrew Ke, Samantha McGinnis, Matthew Tung, Lendon Dunaway*
San Jose, CA
The team of teenagers and their coach from San Jose, CA, are Young Makers who designed and built the Grid, a giant interactive game board that you walk on to play.
- *Shubham Banerjee*
San Jose, CA
Shubham Banerjee developed a low cost Braille printer, Braigo, using the Lego Mindstorms EV3 set as an accessible solution for blind and disadvantaged people across the globe.

- *Nicole Farb*
San Francisco, CA
Nicole Farb is CEO and co-Founder of Darby Smart which is the online Marketplace for Makers.
- *Lisa Fetterman*
San Francisco, CA
Lisa Fetterman inadvertently launched a kitchen appliance market with her open-source modernist sous vide kitchen appliance turned Kickstarter startup, her machine "Nomiku" is in thousands of American homes and in the commercial kitchens of top chefs internationally.
- *Saul Griffith*
San Francisco, CA
Saul Griffith is the Founder and Principal Scientist at Other Lab, where he focuses his work on clean energy technologies and advanced manufacturing.
- *Justine Lee*
Ithaca, NY
An environmentally conscious apparel designer, Justine developed and created American Design & Detail (ADD), a collection of transformable, convertible apparel and accessories, utilizing cutting-edge domestic manufacturing technologies of laser cutting, Kinetic ColorizationTM, and 3D Printing.
- *Caine Monroy*
Hacienda Heights, CA
At the age of 9, Caine Monroy was able to transform something as simple as a cardboard box into a tool of imagination for children across the globe, creating Caine's Arcade, and launched the reach of his creativity through Imagination Foundation.
- *Brit Morin*
San Francisco, CA
Brit Morin is founder and CEO of Brit + Co, an online DIY platform that provides tools to teach, inspire, and enable creativity for over 5 million women and girls.
- *Christine Mytko, Samuel Schickler, Jane Yarnell*
Berkeley, CA
Seventh grade students from Black Pine Circle School in Berkeley, California, used a powerful x-ray beam at the U.S. Department of Energy Office of Science's Advanced Light Source to get high-resolution scans of samples they selected, then used open source visualization software and 3D printing to make enlarged physical models, revealing the samples' internal microstructures.
- *Emily Petrone*
Mountain View, CA

Emily Petrone founded Tindie - a marketplace for makers to buy and sell their creations.

- *Gene Sherman*
Riverside, CA
Gene Sherman is the Founder/CEO of Vocademy - The makerspace, and has dedicated his life to making more makers.
- *Sylvia Todd*
Auburn, CA
12 year old, Sylvia Todd, makes a DIY webshow about making, released a watercolor painting robot kit, is a soon to be published author, and strives to inspire and educate kids around the world.
- *Dara Yu*
Culver City, CA
Dara was a finalist on Masterchef Junior and now has her own Youtube cooking show where she not only inspires others to cook healthy delicious food, but interviews chefs and explores unique food related topics.
- *Nathan Seidle*
Boulder, CO
Nathan Seidle enables makers to make and hackers to hack by designing the building blocks of electronics.
- *Bruce Dixon and Jeffrey Bechard*
New Britain, CT
Bruce and Jeffrey represent CPEP, an educational nonprofit organization that inspires and prepares underrepresented youths to earnestly pursue careers in STEM through innovative hands-on out of school programs.
- *Lindsey Wilbur*
Honolulu, HI
Lindsey Wilbur is an affiliate at the Institute for the Future in Hawaii where she works on Maker Cities and Governance Futures Lab initiatives and is interested in how makers are addressing urban challenges, studying Maker Faires in San Mateo and New York, and Makerspaces around Detroit and San Francisco.
- *Zach Kaplan*
Chicago, IL
Zach Kaplan is founder and CEO of Inventables, the hardware store for designers.
- *Laura and Scott Brusaw*
Sagle, ID
Laura and Scott Brusaw are the inventors of Solar Roadways, a modular paving system of solar panels that can withstand the heaviest of trucks, can be installed any surface

under the sun, and pay for themselves primarily through the generation of electricity, an Indiegogo project.

- *Mike Salguero*
Boston, MA
Mike Salguero is cofounder of Custommade.com, a site dedicated to helping makers make a living doing what they love.
- *Sally Carson*
Ann Arbor, MI
Sally Carson created Pinoccio, a toolkit that makes it easy for Makers to create web-enabled projects.
- *Matthew Burnett*
Detroit, MI
Matthew Burnett is the cofounder and CEO of Maker's Row, an online marketplace that connects American manufacturers with product based businesses.
- *Tom Jaszczak*
Helena, MT
Tom Jaszczak is an artist in residence at the Archie Bray Foundation where he pursues art in the form of pottery and is a seller on Etsy, after receiving a Bachelor of Arts in Visual Art and a Bachelor of Science in Biology from Bemidji State University.
- *Bennett Harris*
Burlington, NC
"Harris Educational" uses digital fabrication technology to produce STEM Science Kits like "Reinventing Edison: Build your own Light Bulb" and an EV-Challenge Troubleshooting Board in addition to reaching out to the community to launch the Alamance Makers Guild and produce and sponsor the Burlington Mini Maker Faire.
- *Joseph Babbit*
New York, NY
Joseph used Piezo discs to create an electric current that charges household batteries in an environmentally friendly way, with energy generated just by walking around.
- *Starr LaTronica*
Binghamton, NY
Starr LaTronica has been making things from fabric since she learned to sew Barbie clothes in 3rd grade and has passed on this practical and inspiring skill to subsequent generations through library programs and Girl Scout activities.
- *Tanya Menendez*
Brooklyn, NY

Tanya Menendez is the cofounder and COO of Maker's Row, an online marketplace that connects American manufacturers with product based businesses to create more goods in the United States.

- *Susan Taing*
New York, NY
Susan Taing of bhold.co creates original and inventive designs by merging modern product design with the latest 3D printing technology, an example of what she's calling *responsive product design*, and has been brought to customers via Shapeways.com.
- *Jonna Twigg*
New York, NY
A maker of many things Jonna Twigg is a designer, entrepreneur, and innovative bookbinder as owner of Twigg's Bindery.
- *Tommy Young*
Duxbury, NY
Tommy Young is a Better Lesson/Master Teacher Project Educator who instills his students with a love for math while fostering skills to tackle rigorous challenges.
- *Adam Fasnacht*
Strongsville, OH
Adam Fasnacht engages in all kinds of making from crafts to metalwork, but has a particular affection for technology and pyrotechnics.
- *Matthew Norris*
Tulsa, OK
Representing the six other co-founders of Fab Lab Tulsa, Matthew balances his energy for making between designing disposable potty seats to help his children potty train, and experimenting with designs which demonstrate how rapid prototyping aids disaster relief.
- *Kevin Bates*
Tigard, OR
Kevin Bates created the Arduboy, a fully functioning computer the size of a credit card that can be programmed by a user to have games or display any information using the popular Arduino software and has been made available through Tindie.com.
- *Tom Lauwers*
Pittsburgh, PA
Tom Lauwers is founder of BirdBrain Technologies LLC, maker of the Finch robot and the Hummingbird robotics kit.
- *Kipp Bradford*
Pawtucket, RI

A biomedical engineer and educator, Kipp Bradford runs KippKitts making medical devices, wireless sensor networks, and micro cooling solutions, when he's not busy making Maker Faires like the recent DC Mini Maker Faire.

- *Hannah Chung*
Providence, RI
Hannah Chung and Aaron Horowitz created Jerry the Bear, a best friend for kids with type 1 diabetes that helps them master their medical procedures through play.
- *Aaron Horowitz*
Providence, RI
Hannah Chung and Aaron Horowitz created Jerry the Bear, a best friend for kids with type 1 diabetes that helps them master their medical procedures through play.
- *Roxana Reyna*
Corpus Christi, TX
As a Maker Nurse at Driscoll Children's hospital in Corpus Christi, TX, Roxana Renya alleviates the pain and suffering of children and babies born with their organs on the outside of their belly button to eliminate the need for immediate surgery by using innovative and creative advanced wound-care techniques.
- *Robert Bridges*
Machipongo, VA
eFab Local is a digital fabrication shop in rural Machipongo, Virginia cutting custom CNC-designs and making flat-packed emergency shelters to improve the lives of homeless and displaced people everywhere.
- *Kate Latham*
Machipongo, VA
eFab Local is a digital fabrication shop in rural Machipongo, Virginia cutting custom CNC-designs and making flat-packed emergency shelters to improve the lives of homeless and displaced people everywhere.
- *Bill Young*
Willis Wharf, VA
Trained as a boat carpenter, Bill now works with digital tools at ShopBot Tools and helped develop the 100kGarages fabrication network and the Shelter 2.0 project.
- *Matthew Rogge*
Seattle, WA
Matt Rogge promotes recycling and entrepreneurship in resource-limited areas by making low-cost machines that enable the use of waste plastic as a raw material for 3D printing, and was recognized as part of the 3D4D challenge.
- *Massimo Banzi*
Monza, Italy

EMBARGOED FOR 12:00AM EDT WEDNESDAY, JUNE 18TH

Massimo Banzi is co-Founder and CEO of Arduino, the open source hardware platform used by the vast majority of makers to develop their electronics products

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