Smithsonian

2017 Activities Report

The Lemelson Center
for the Study of Invention & Innovation

VISION

A world in which everyone is inventive and inspired to contribute to innovation.

MISSION STATEMENT

The Lemelson Center engages, educates, and empowers the public to participate in technological, economic, and social change. We undertake historical research, develop education initiatives, create exhibitions, and host public programming to advance new perspectives on invention and innovation and to foster interactions between the public and inventors.

Cover: ACCelerate festival guests interacting with exhibitors. Smithsonian photo by Jaclyn Nash.

Furby, breakout 1998 robotic toy, featured this year for the Spark!Lab theme of "play."

Military Invention Day guests interacting with exhibitors. Smithsonian photo by Richard Strauss.

Places of Invention Interactive Map. Smithsonian photo.

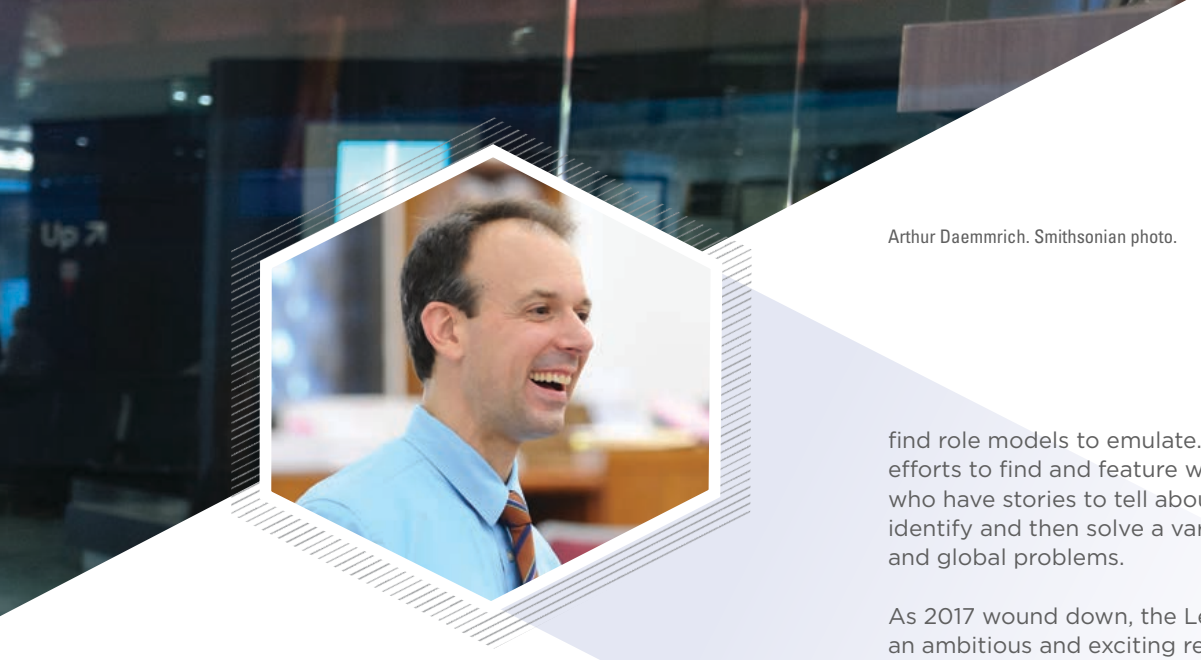
Contents

FROM THE DIRECTOR

Qatar Foundation tour of *Places of Invention.* Smithsonian photo by Jaclyn Nash.

The Lemelson Center had a remarkable 2017, with growth in research and education, and dynamic new public programming initiatives.

We engaged 220,000 young people in invention activities in Draper Spark!Lab and doubled the Spark!Lab National Network to eight locations across the United States, reaching over 300,000 additional young minds nationwide. Public programming by the Center is showcasing diverse living inventors and their work.



Arthur Daemmrich. Smithsonian photo.

In the past year, our Innovative Lives programs fostered dialogue between the public and inventors on topics ranging from frontline medical care to the Super Soaker water gun, and large festivals like Military Invention Day and ACCelerate drew tens of thousands of enthusiastic visitors. Through these and other programs, we are using history to encourage people to invent, tinker, and tweak. These skills are more important than ever considering the accelerating rate of technological change and the deep uncertainties we face regarding the future.

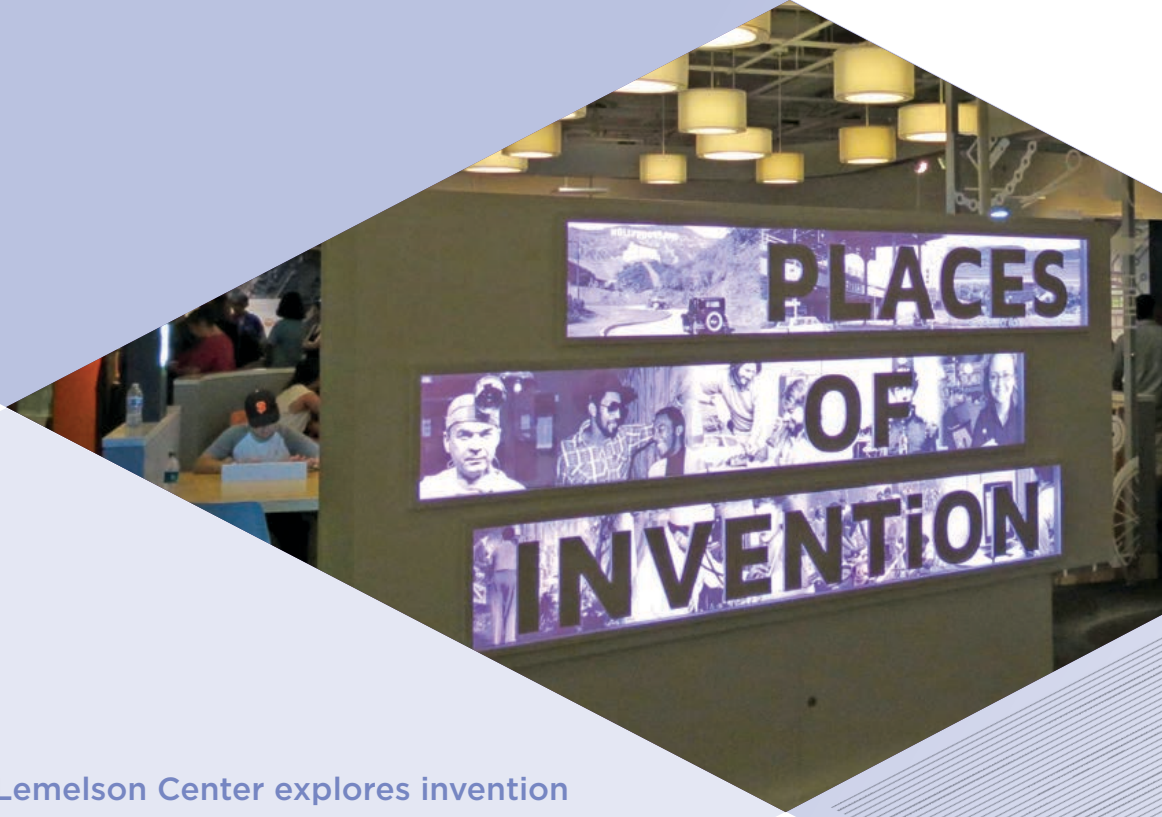
Even as we advance education and programming, the Lemelson Center team members and visiting fellows are studying innovation as a process, not just "eureka" moments. We are beginning to seriously examine the institutional supports—or lack thereof—that serve as bridges between ideas and markets. The Center's work to document and preserve invention stories continues to pay attention to inventor notebooks and other primary sources, but we also are recording in-depth oral history interviews with venture capitalists and others involved in bringing ideas to markets. A more comprehensive look at "invention 360" is emerging from this work. One key finding is that although new ideas originate in unpredictable ways from curious minds, the resources to become an inventor and bring new technologies to markets are highly concentrated. At the Lemelson Center, we are showcasing the diversity of inventors today so that young people find role models to emulate. We also are developing new efforts to find and feature women and minority inventors who have stories to tell about how they were inspired to identify and then solve a variety of personal, community, and global problems.

As 2017 wound down, the Lemelson Center launched an ambitious and exciting research and exhibition plan on invention and sports. We are especially interested in exploring several key questions: Why do some sports inventions succeed immediately, and why do others fail? Do new technologies enhance or undermine the purity of competition and accessibility of sports? In what ways do sports inventions affect competitors, players, and consumers? Our research leading to a new exhibition in the Jerome and Dorothy Lemelson Hall of Invention and Innovation will focus especially on the interplay among inventors, athletes, sports federations, the media, and the public as the source of new technologies in sports, and as the arbiters of what is fair or unfair in both play and competition.

Looking at the present state of public dialogue on invention and innovation, it is easy to fear change and even easier to think that technology proceeds on its own imperative. But the perspective the Lemelson Center brings through research projects, education in Spark!Labs across the country, exhibitions, and diverse programs points to a bright future of invention for world needs and greater public engagement with innovation. To get there, we invite your help and participation!

ARTHUR DAEMMRICH
Jerome and Dorothy Lemelson
Director

EXPLORE



The Lemelson Center explores invention and innovation with diverse audiences of all ages through exhibitions and programs.

Places of Invention Exhibition

Our award-winning *Places of Invention (POI)* exhibition continues to welcome some 480,000 visitors per year to the Lemelson Hall of Invention and Innovation. Audiences of all ages explore the six featured communities, from the best-known invention hot spot, Silicon Valley, to the surprising Bronx, NY, to other fascinating but lesser-known stories of inventions in Fort Collins, CO, Hartford, CT, Hollywood, CA, and Medical Alley, MN. Since the exhibition opened July 1, 2015, the interactive map featured in the center of the *POI* gallery has received over 22,000 total visitor story submissions about inventors and innovations from across the United States and the globe.

Places of Invention Public Programs

America as a Place of Innovation: Great Inventors and the Patent System—
On February 16, we partnered with the George Mason University Center for the Protection of Intellectual Property and the United States Patent and Trademark Office (USPTO) for a panel discussion examining the social, economic, and legal context of innovation in late nineteenth-century America. Disputes arising from Bell's telephone patent and the impact of Edison's invention of the electric light bulb on American culture were among the innovation stories featured.

Places of Invention gallery view. Smithsonian photo.

Team Familiar performing. Smithsonian photo.

Inventive Minds: Sporting Inventions gallery features stories of inventors who changed the way Americans play. Smithsonian photo by Hugh Talman.

Inventive Minds Exhibition

A new exhibition, *Inventive Minds: Sporting Inventions*, was installed in the gallery in August 2017 and will be on display through August 2018, with new objects added in January and May 2018. The exhibition features stories of inventors who changed the way Americans play—from Marilyn Hamilton, inventor of the lightweight Quickie sports wheelchair, to Howard Head, who created skis and tennis rackets that enhanced average skill.

With support of the Lemelson Foundation, we conducted oral history interviews with John Warner, the co-founder of the field of green chemistry, and David Stone, inventor of a carbon-negative substitute for concrete, as part of our 2016–2017 theme, *Inventive Minds: Inventing Green*.

From Jazz to Go-Go: The Sounds of Community and Change—On July 1, we hosted an afternoon of lively music and discussion exploring the innovative musical history of Washington, DC, as the birthplace of go-go and a proud community where jazz and other genres have been vital to cultural expression for generations.

Wind Me Up Chuck: The Influence of Chuck Brown and Go-Go as DC History—On August 20, we traveled to the DC Public Library's Woodridge branch for a panel discussion on Chuck Brown's role as a creator of the go-go music genre, his contributions to the DC music community, and the earlier music—blues, jazz, and funk—that influenced his creativity.

EXPLORE

"Mayhem," the winning cyber security system in the 2016 DARPA Cyber Grand Challenge, displayed in the National Museum of American History. Smithsonian photo.

Innovations in Defense: Artificial Intelligence and the Challenge of Cybersecurity

With support of the Defense Advanced Research Projects Agency (DARPA), the Lemelson Center brought an artificial intelligence machine to the National Museum of American History (NMAH) for a six-month exhibition. Visitors saw a groundbreaking, prize-winning "cyber reasoning system" that was designed to fix software vulnerabilities and even block attacks from new computer viruses.

Military Invention Day

On May 20, we partnered with research and innovation labs from the US military and associated organizations to display more than 30 leading-edge inventions and innovations alongside historical artifacts. Over 24,800 visitors saw technologies not yet in common use; met and interacted with scientists, engineers, and soldiers from the Army, Navy, Air Force, Marines, DARPA, Draper, and others; and tried their hand at invention challenges. On stage, General Mark A. Milley, chief of staff of the US Army, discussed the role of invention for defense strategy and warfare, and panels explored how military technology will find new uses for civilians in the future.

ACCelerate

In collaboration with Virginia Tech's Institute for Creativity, Arts, and Technology, we presented the first ACCelerate: ACC Smithsonian Creativity and Innovation Festival on October 13–15. The festival was a celebration of creative exploration and research happening at the nexus of science, engineering, arts, and design, with 48 interactive installations from across the 15 ACC colleges and universities that addressed global challenges in the areas of environment and sustainability; health, body, and medicine; civic engagement; advanced manufacturing and making; biomimicry; and arts and technology. It also featured 12 dramatic and musical performances and nine panel discussions. During the festival's three-day run, the Museum welcomed more than 36,000 visitors.

Army Micro Autonomous technology, on view during Military Invention Day. Photo by Stephen McNally/UC Berkeley.

ACCelerate festival guests interacting with exhibitors. Smithsonian photo by Richard Strauss.

EXPLORE

2017 Innovative Lives speaker Lonnie Johnson, inventor of the Super Soaker. Photo courtesy of Johnson R&D Co.

Innovative Lives Public Programs

Part of the Lemelson Center's vision of a more inventive world, Innovative Lives engages audiences of all ages and backgrounds in public conversations with diverse inventors, innovators, and entrepreneurs about their pioneering work and careers. This year's series included:

Innovative Lives: Lonnie Johnson—On February 2, inventor Lonnie Johnson, best known for his wildly popular invention, the Super Soaker water gun, and for his work on high-performance Nerf dart guns, spoke about the upbringing and education that led him to devote his life not only to creating toys, but to solving some of the world's most complex technological problems at Johnson R&D.

Susannah Fox, Tiffany Kelley, and Anna Young at Innovative Lives. Smithsonian photo by Richard Strauss.

Innovative Lives: A Dialogue on Healthcare Innovation—On March 16, a conversation between Tiffany Kelley, founder of Nightingale Apps, and Anna Young, co-founder and CEO of MakerHealth, focused on entrepreneurial innovations by and for nurses, the challenges and rewards of the inventive process, and pursuing breakthrough solutions to bridge gaps in healthcare.

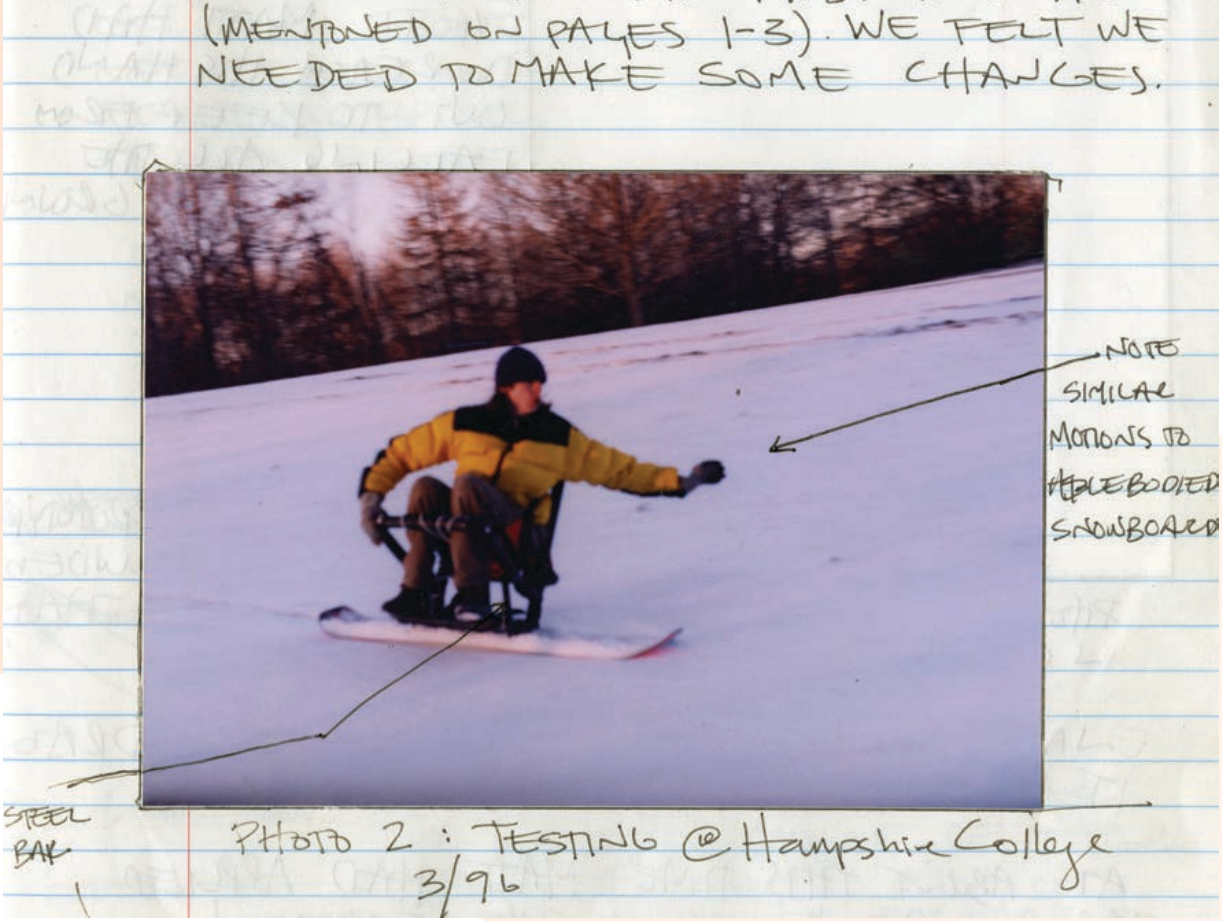
Innovative Lives: Rodney Mullen and Steven Sebring 360—On September 7, Rodney Mullen, one of the world's most influential skateboarders, who creates and performs tricks no one else can execute, and Steven Sebring, a photographer, filmmaker, artist, and inventor who is pushing boundaries to explore humans from new perspectives, treated audiences to a special screening of their joint creative film project *Liminal*, and discussed their thoughts on the necessity of innovation.

2017 Innovative lives speaker Rodney Mullen. Smithsonian photo by Jaclyn Nash.

2017 Innovative Lives speaker Steven Sebring. Smithsonian photo by Jaclyn Nash.

Still from *Liminal*. Photo by Steven Sebring.

STUDY



The Lemelson Center advances scholarship about the history of invention and innovation through workshops, fellowships, research opportunities, documentation activities, and publications.

Page from Matt Capozzi and Nathan Connolly's accessible snowboard invention notebook, February–October 1996. Archives Center, National Museum of American History.

Invention, Sport, Technology, and Society Workshop

The athletics industry is under pressure to develop new technologies and other innovations that provide competitive advantages. Likewise, inventions change how the public engages, consumes, and participates in sport. In September, we launched a multi-year initiative to explore the relationship between invention and sport with a two-day workshop featuring scholars, athletes, inventors, policy makers, sport industry leaders, and museum and education professionals. Sessions considered the invention and use of new equipment, and changes to physical training, medical technologies, and nutrition, while also exploring the key questions of *who* is involved in the invention and creation of technologies for sports and *who* decides when the use of a new technology is beneficial, fair, legal, and ethical.

Venture Capital Initiative

In 2016, the Center received generous seed funding from three pioneering venture capitalists—Thomas Baruch, the late William Bowes, and William Draper III—to launch a documentation and programming initiative on the history and contemporary impact of venture capital for the American innovation ecosystem. In 2017, the Center advanced the initiative in three ways. First was a joint acquisition with Stanford University of materials from the 2011 documentary film, *Something Ventured*. The acquisition includes raw video footage and interview transcripts from several pioneering venture capitalists and the entrepreneurs they financed. Second, the Center recorded new oral history interviews with inventor of the semiconductor laser and angel investor Don Scifres and with biotech investor Sam Colella. Third, the Center introduced a new "Sell It" station in Draper Spark!Lab where visitors can record a short video "pitching" their invention ideas. The Center will continue to expand its work in this area through additional oral history recordings and development of public programs to help its audiences appreciate the crucial role that venture capitalists play in the process of innovation.

Something Ventured movie poster.

Nolan Bushnell oral history interview. Smithsonian photo.

Video Game Pioneers Archive

In the duration of a single generation, video games evolved from a fringe activity to a central technology in education, simulation, and entertainment. The window of opportunity to capture the developmental arc of this simultaneously technical and creative industry through first-hand recollections and perspectives of its founders is narrowing. In close collaboration with industry leaders, we are undertaking in-depth video oral history recordings and developing innovative ideas for public engagement using the materials. In 2017, we recorded interviews with Steve "Slug" Russell and Peter Samson, who coded the game Spacewar!; Nolan Bushnell, founder of Atari; Don Daglow, who wrote the first baseball simulation game and numerous others; and Brenda Laurel, one of the first women in the video game industry, who also created Rockett's New School.

STUDY

Research Support

The Lemelson Center supports the work of scholars by offering residential fellowships, travel-to-collections grants, and an annual archival internship. We also host and advise visiting scholars who have other financial support.

The Arthur Molella Distinguished Fellowship is endowed by the Lemelson Foundation to honor the scholarly contributions in the history of invention and innovation in American society by the Lemelson Center's founding director emeritus, Dr. Arthur P. Molella.

- The 2016–2017 Molella Distinguished Fellow was **Dr. Rayvon Fouché**, director of the American Studies Program and associate professor in the School of Interdisciplinary Studies at Purdue University. His research project was "The Machine in the Game: Technology, Design, and the Evolution of Contemporary Sport."

- The 2017–2018 Molella Distinguished Fellow is **Dr. Stephen Mihm**, associate professor of History at the University of Georgia. He is carrying out research on "The Search for Standards: Modernity, Markets, and the Order of Things."

In 2017, we also welcomed the following Lemelson Center Fellows in Residence:

- **Spring Greeney**, PhD candidate, History, University of Wisconsin-Madison; "What Clean Smells Like: An Environmental History of Doing the Wash, 1845–1992."

- **Kendra Smith-Howard**, PhD, associate professor, History, University at Albany, SUNY; "The Messy History of Cleaning Up in America, 1900–2000."

- **Adelheid "Heidi" Voskuhl**, PhD, associate professor, History and Sociology of Science, University of Pennsylvania; "Innovation as Institution: Machine Ages, Theories of Government, and the 'Consequences' of Technology in Industrial and Post-Industrial Eras (c. 1890 to 2000)."

- **Jacob Ward**, PhD candidate, History, and Science and Technology Studies, University College London and Science Museum London; "Networks within Networks: Connecting Transatlantic Histories of Tele-communications from 1960."

- **Heather Toomey Zimmerman**, PhD, associate professor, Education, Pennsylvania State University; "Designing Educational Supports for Family Learning during Spark!Lab Inventing Activities."

2017 Lemelson Center Fellow in Residence Spring Greeney.

2016-2017 Molella Distinguished Fellow Dr. Rayvon Fouché.

Travel-to-Collections Awards provide travel funds for research on the history of invention and innovation using the extensive holdings of NMAH's Archives Center and curatorial divisions. In 2017, we hosted the following awardees:

- **Sarah A. Bell**, PhD, assistant professor, Digital Media, Michigan Technological University, researched "From Speak & Spell to Siri: A Media History of Voice Synthesis."
- **Donna J. Drucker**, PhD, instructor, English, Technische Universität Darmstadt, explored "Materializing Gender through Contraceptive Technology in the United States."
- **Robin Lynch**, PhD candidate, Art History & Communication Studies, McGill University, examined collections related to "Locating the Visual in Research and Development: The Allure of Creativity."
- **Elizabeth Neswald**, PhD, associate professor, History of Science and Technology, Brock University, researched "Material Cultures of Diabetes Management."

The annual Lemelson Center Summer Archival Internship offers an opportunity for a graduate student to work on invention-related collections held in the NMAH Archives Center. The 2017 Summer Archival intern was **Sara Wheeler**. Her projects included Ralph H. Baer Papers (addenda), InBae Yoon Papers, Peter J. Bier Papers, Washington Society of Engineers Records, Lloyd F. Rader Papers, and Atlas Imperial Diesel Engine Company Records.

STS-31 Mission Specialist Kathryn D. Sullivan poses for a picture, April 25, 1990, before donning her space suit and extravehicular mobility unit in the airlock of Discovery. Photo courtesy of NASA.

Publications

In addition to the weekly blog, Lemelson Center team members also published numerous peer-reviewed articles on specific topics in invention and innovation.

Two new book proposals were accepted to the Lemelson Center Studies in Invention and Innovation series, published by the MIT Press. Co-edited by Joyce Bedi, Arthur Daemmrich, and Arthur Molella, the series advances scholarship in the history of technology, engineering, science, architecture, the arts, and related fields and disseminates it to a general-interest audience.

- *The Innovator Imperative*, edited by Matthew Wisnioski, Eric S. Hintz, and Marie Stettler Kleine, unpacks what motivates contemporary efforts to train innovators, why there is an emerging critique of this imperative, and what work is being done to reconcile these views.
- *Handprints on Hubble: An Astronaut's Story of Invention*, by Kathryn D. Sullivan, a former astronaut and the first American woman to walk in space, explores a vital but overlooked chapter in the Hubble Space Telescope's story.

The Lemelson Center also encourages scholarly publishing by its own staff:

- Joyce Bedi, "Movies Meet the Rainbow," in *Bright Modernity: Color, Commerce, and Consumer Culture*, eds. Regina Lee Blaszczyk and Uwe Spiekermann (Palgrave Macmillan, 2017), 133–148.
- Arthur Daemmrich, "Pharmaceutical Manufacturing in America: A Brief History," *Pharmacy in History* 59 (2017): 63–72.
- Arthur Daemmrich, "Invention, Innovations Systems, and the Fourth Industrial Revolution," *Technology and Innovation* 18 (2017): 257–265.
- Eric Hintz, "The 'Monopoly' Hearings, Its Critics, and the Limits of Patent Reform in the New Deal," in *Capital Gains: Business and Politics in Twentieth-Century America*, ed. Richard R. John and Kim Phillips-Fein (University of Pennsylvania Press, 2017), 61–79.

TRY

Spark!Lab, the Center's premier educational program, engages and empowers families to participate in the invention process at NMAH, as well as nationally and internationally, through outreach initiatives.

Draper Spark!Lab

In its second year, the Draper Spark!Lab welcomed 220,000 visitors who explored, created, collaborated, and invented. Activities were designed around family-friendly themes that connected to NMAH collections and changed every four months, ensuring that Spark!Lab visitors had something new to explore each time they visited.

During 2017, the themes included:

- Home (November 2016–February 2017)
- Community (March–July 2017)
- Eat (August–November 2017)

Young inventor in Spark!Lab. Smithsonian photo.

Volunteers and young inventors in Spark!Lab. Smithsonian photo.

In collaboration with the Smithsonian's Accessibility Office, the team began a project to make Spark!Lab more accessible and inclusive for ALL visitors. We initiated "inclusive customer service" training for our staff, volunteers, and interns and offered verbal description training to help staff and volunteers develop skills to work with visitors who are blind or have low vision. We also developed, tested, and introduced the Sensory Resource Toolkit to help Spark!Lab visitors, particularly those on the autism spectrum or with other sensory or cognitive processing disabilities, prepare for and participate in a visit to Spark!Lab.

Spark!Lab National Network

We added four new Spark!Lab National Network sites this year:

- The Children's Museum of the Upstate in Greenville, SC (February)
- Midland Center for the Arts in Midland, MI (June)
- Edison and Ford Winter Estates in Fort Myers, FL (October)
- US Space & Rocket Center in Huntsville, AL (November)

These sites join our other four locations:

- Terry Lee Wells Nevada Discovery Museum in Reno, NV
- Science City at Union Station in Kansas City, MO
- Anchorage Museum in Anchorage, AK
- Michigan Science Center in Detroit, MI

In total, our eight Network sites served **over 300,000 visitors** this year and developed more than **20 new programs** and activities to engage their visitors in the invention process.

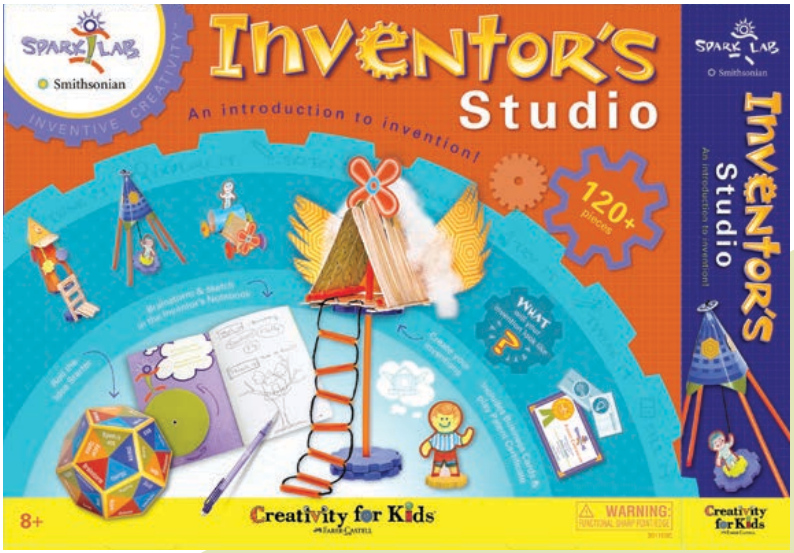
From November 1–3, the Lemelson Center hosted the second annual Spark!Lab National Network Conference at the Smithsonian. Fourteen Network representatives from seven sites joined the Draper Spark!Lab staff for three days to share highlights from their Spark!Labs, discuss challenges, brainstorm new ideas, and network with one another.

We kicked off a multi-year collaboration with the University of Westminster. Two student interns traveled from London in May to spend the summer learning about Spark!Lab and practicing facilitation strategies for engaging children and families in the invention process. At the end of the summer, they returned to Westminster to help train UK-based volunteers to work with kids during "pop-up" Spark!Lab events held on the university campus and in the local community. The first event in October drew more than 100 people.

TRY

Spark!Lab Inventive Creativity Kits

Designed to provide children with the same kind of hands-on experience at home that they enjoy when visiting Spark!Lab, the Spark!Lab Smithsonian Inventive Creativity Kits have had another successful year. Two new kits were introduced in 2017—Invent a Stellar Solar Lamp and Invent Amazing Art Gadgets—for a total of ten. In April, the kits were featured on *Good Morning America's* "Deals and Steals" segment as a featured product for kids.



Spark!Lab Inventive Creativity Kit.
Photo courtesy of Faber-Castell Company.

ePals Challenge

In January, we launched the sixth annual Global Spark!Lab Invent It Challenge in collaboration with Cricket Media's ePals online platform. The theme for 2017 was "inventing green," and we challenged kids to create an invention that addressed a real-world environmental issue. Alone or in groups, kids had to work through the invention process, identifying a problem, researching possible solutions, sketching designs, building and testing prototypes, and creating compelling ads or "sell sheets" to market their ideas. More than 500 children ages 5–18 from around the world participated in the challenge. Winning inventions included blinds with solar panels on them to generate electricity for homes, a personal environmental quality monitor, an app to teach animal conservation, and a device that drains water from roofs and gutters into a tank so that it can be collected and used for other purposes.

Arby's Promotion

From August through November, Arby's included four Spark!Lab-themed toys with kids' meals: a light bulb, a wheel, a glider, and a sundial. Each toy came with an insert that included brief historical information about the invention and a link to the Spark!Lab web page. About 2.75 million toys were distributed through the promotion.

SPARK App League

In November, the Lemelson Center collaborated with the city of Gilbert, AZ, in support of its one-of-a-kind SPARK App League Game Jam competition. Hosted at Arizona State University, the Game Jam brought together middle and high school students from across Arizona to learn about the power of coding and to participate in a two-day challenge to create a new mobile app. For the 2017 event, the Lemelson Center and SPARK App collaborated to integrate Spark!Lab themes and activities into the competition, requiring the teams to create a digital invention challenge for their users. Lemelson team members provided guidance and advice to the teams and facilitated Spark!Lab activities throughout the event.

Spark App Game Jam Fall 2017 participants. Photo by TOGphotos.

FACTS & FIGURES

In-Person Engagement

62,000
Participants at Lemelson Center Public Programs

516,000
Visitors to *Places of Invention* and *Inventive Minds* exhibitions

220,000
Visitors to Draper Spark!Lab

300,000
Visitors to all Spark!Lab National Network sites

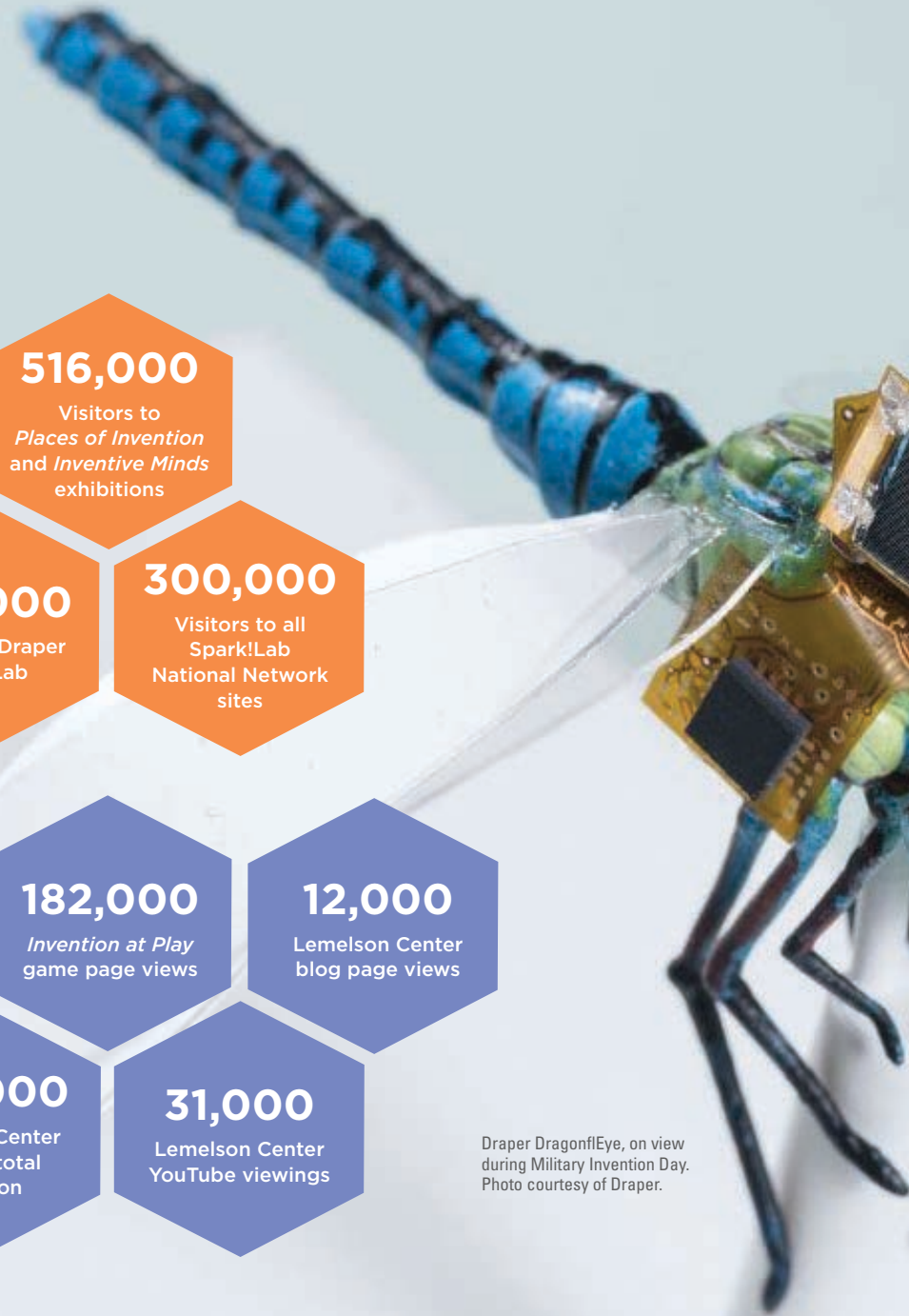
Internet Engagement

182,000
Invention at Play game page views

12,000
Lemelson Center blog page views

675,000
Lemelson Center website total visitation

31,000
Lemelson Center YouTube viewings



Draper DragonflEye, on view during Military Invention Day. Photo courtesy of Draper.

Social Media Interactions

Facebook
93 posts
83 new fans
778 engagements
15k impressions

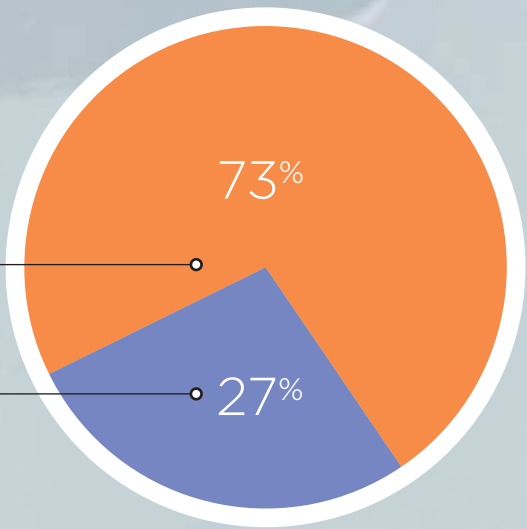
Twitter
181 tweets
591 new followers
777 engagements
236k impressions

Instagram
33 posts
1.1k followers
603 engagements
11k impressions

Revenue

Endowment income
$1,409,000

Grants, Sponsorships, and Gifts*
$526,000

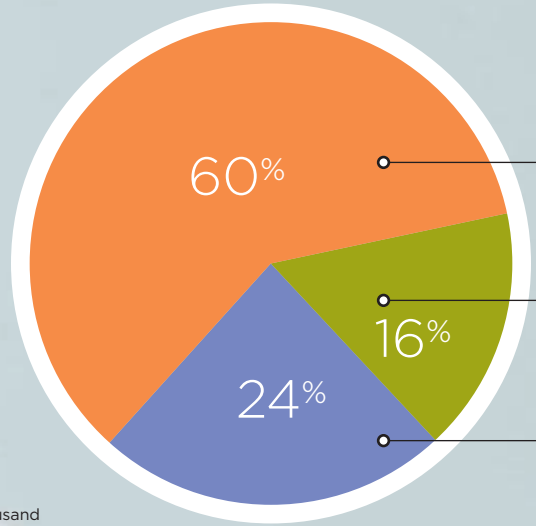


Expenditures

Lemelson Center Staff
$1,125,000

Spark!Lab Staff and Operations
$307,000

Research, Fellowships, Public Programs, and Exhibitions
$439,000



All figures rounded to nearest thousand
* Multi-year support shown as 2017 portion only

AHEAD

ACCelerate festival demonstration. Smithsonian photo by Richard Strauss.

LOOKING AHEAD

We will continue to advance education and scholarship about invention and innovation both on and beyond the National Mall through the following activities in 2018:

2018 Innovative Lives speaker Kareem Abdul-Jabbar. Photo courtesy of Iconomy.

***Sporting Invention* Exhibition and Programs**—The Lemelson Center team will begin the initial phase of research for the exhibition, convene a design charrette to refine the exhibition's main themes and objectives, establish an Exhibition Advisory Group, and develop funding proposals. The Center also will launch public programming in this area.

2018 Innovative Lives Series—From February to June, this award-winning series will feature six programs at NMAH highlighting diverse inventors and innovators. The kickoff program will feature basketball legend, US cultural ambassador, and best-selling author of *What Color Is My World: The Lost History of African-American Inventors*, Kareem Abdul-Jabbar.

Dr. InBae Yoon Invent It Challenge—We will host the Spark!Lab Dr. InBae Yoon Invent It Challenge to encourage students from around the world to create inventions that can help prepare for and recover from natural disasters. Thanks to the generosity of the Yoon family, the annual Challenge will include a multi-day visit to NMAH for winners in each age category, during which they will undertake invention collaborations and receive special tours of the Museum's invention collections.

Military Invention Day—On May 19, over 30 leading-edge technologies, interactive displays, and insights from military leaders on the future of invention and innovation will be featured for the day at NMAH.

Trademark Exposition—July 27–28, in partnership with the USPTO, the Lemelson Center and NMAH will showcase trademarks—past and present—and explore with the public their role in consumer information, protection of intellectual property, and impact on everyday life.

ACCelerate festival guests. Smithsonian photo by Richard Strauss.

Military Invention Day guests interacting with exhibitors. Smithsonian photo by Richard Strauss.

ACCelerate guests experiencing one of the many hands-on activities available during the three-day festival. Smithsonian photo by Richard Strauss.

THANKS

SPECIAL THANKS

The Center values collaborating with partners across a broad spectrum of fields to create successful programs and activities for national and international audiences. In 2017, we especially acknowledge the following financial supporters and program partners:

Anchorage Museum

Atlantic Coast Conference

Mark Baer

Baruch Future Ventures

The Boardr

Estate of William K. Bowes

The Children's Museum of the Upstate in Greenville, SC

Computer History Museum

John Dabbar

Defense Advanced Research Projects Agency (DARPA)

DC Public Library

The Charles Stark Draper Laboratory, Inc. (Draper)

William Henry Draper III

Edison and Ford Winter Estates in Fort Myers, FL

Entertainment Software Association (ESA)

ePals and Cricket Media

Faber-Castell

Ford Motor Company Fund

George Mason University Center for the Protection of Intellectual Property

David H. Horowitz Endowment Fund

Bob and Judy Huret

Daniel Kaufman

Know Projects

The Lemelson Foundation

Lemelson-MIT Program

The MIT Press

Michigan Science Center

Midland Center for the Arts in Midland, MI

National Academy of Inventors

NMAH Office of Audience Engagement

NMAH Office of Building Renovation and Exhibition Services

NMAH Office of Curatorial Affairs

NMAH Office of the Director

NMAH Office of External Affairs

NMAH Office of Management and Museum Services

Richard Pablo

Science City at Union Station, Kansas City

Smithsonian Accessibility Program

Smithsonian Enterprises

Smithsonian Office of Contracting

Smithsonian Office of General Counsel

Smithsonian Office of International Relations

Smithsonian Office of the Provost / Under Secretary for Museums and Research

Smithsonian Women's Committee

SportTechie

David Stone

Terry Lee Wells Nevada Discovery Museum

United States Patent and Trademark Office (USPTO)

US Space and Rocket Center in Huntsville, AL

University of Westminster

Virginia Polytechnic Institute and State University

John Warner

InBae and Kyung Joo Yoon and Family

TEAM

The Lemelson Center for the Study of Invention and Innovation was founded in 1995 through the generosity of Jerome Lemelson, one of America's most prolific independent inventors, and his family.

Lemelson Center Team 2017

Arthur Daemmrich
Jerome and Dorothy Lemelson Director

Jeffrey Brodie
Deputy Director

Joyce Bedi
Senior Historian

Nyssa Buning
Spark!Lab National Network Coordinator

Tricia Edwards
Head of Education

Zach Etsch
Spark!Lab Lead Facilitator

Laura Havel
Public Affairs Specialist

Eric Hintz
Historian and Fellowship Coordinator

Jocelyn Knauf
Spark!Lab Floor Manager

Anna Mayfield
Spark!Lab Facilitator

Laurel Miller
Spark!Lab and Public Programs Manager

Alison Oswald
Archivist and Travel-to-Collections Coordinator

Tim Pula
Interpretive Exhibits Coordinator

William Reynolds
Finance and Administration Officer

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The Lemelson Center is grateful for the hundreds of volunteers and Smithsonian staff members who assisted with Draper Spark!Lab, *Inventive Minds*, *Places of Invention*, special events, and other public programs.

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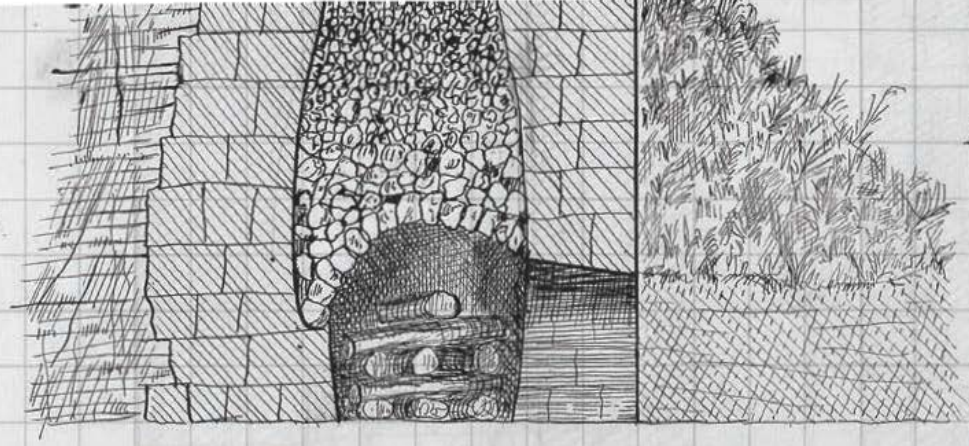
Page from Sketch Book No. 2, J. Parker Snow, 1880s. Engineering Notebook Collection, Archives Center, National Museum of American History.



Old Style
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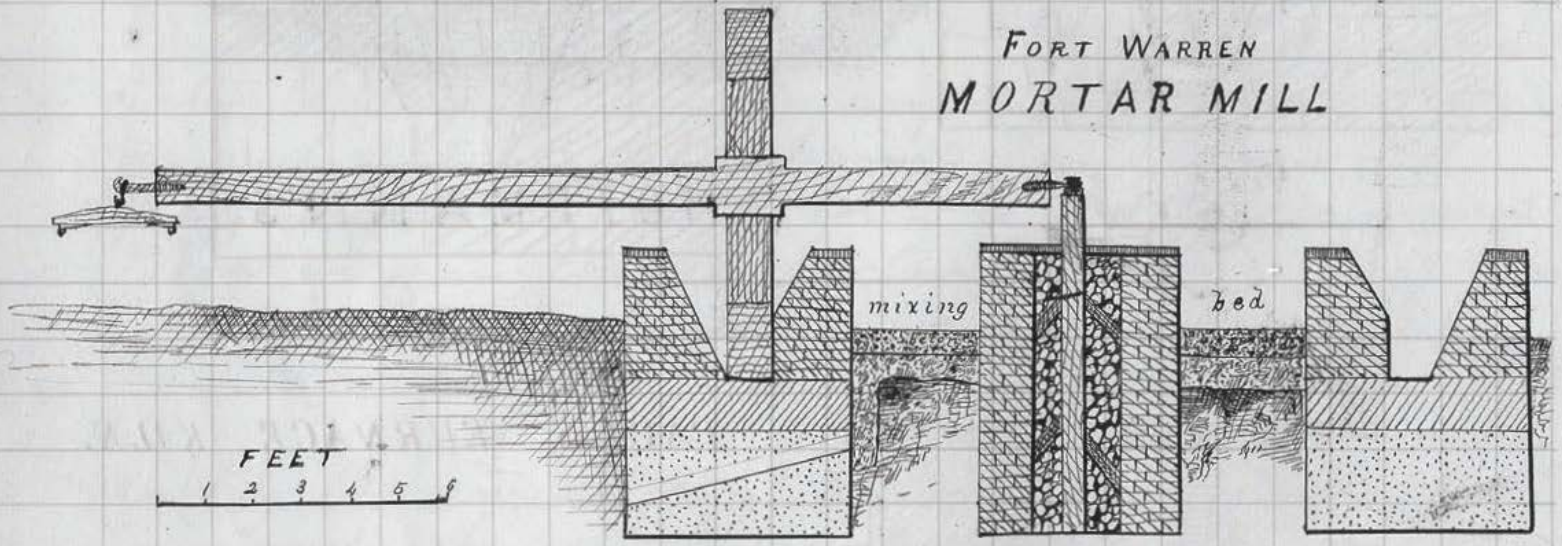
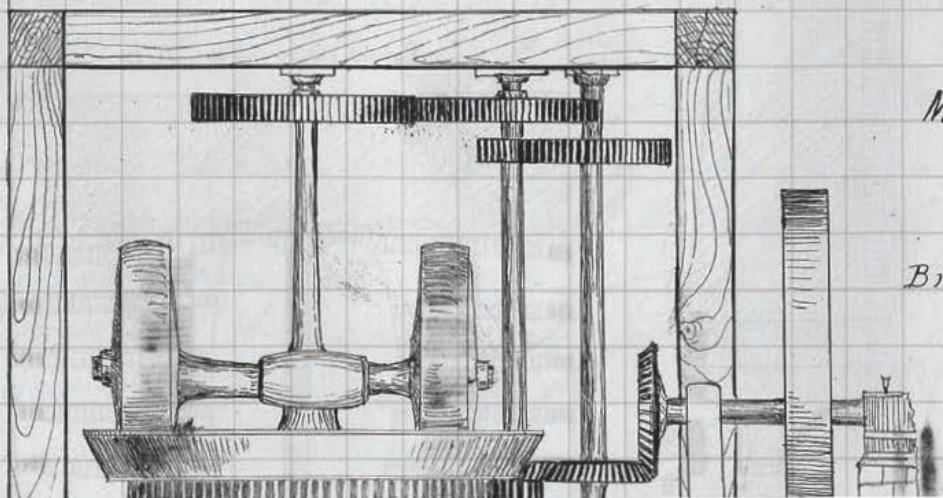
FORT WARREN
MORTAR MILL





STEAM
Mortar Mill
used at Fort Taylor
by
Brevet-major J. Sanders

The Lemelson Center for the Study of Invention and Innovation
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